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THE PHARMACIST AND THE PHARMACOPŒIA.

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A number, if not all, of the American pharmaceutical journals have recently published contributed articles and, in several instances, even editorials, decrying the use of the metric system of weights and measures in the United States Pharmacopœia, and intimating, if not positively asserting, that the introduction of alternative formulas would make the Pharmacopœia more popular with that class of pharmacists that have been, and are, contenting themselves with one or the other of the Dispensatories or other text-books that are allowed to use the text of the Pharmacopœia, in whole or in part, as they see fit.

The writers of these several articles have, however, lost sight of the peculiar conditions existing in American Pharmacy, and have not taken into consideration the history of the origin and development of the several treatises, or so-called commentaries, and their relation to the Pharmacopœia.

In the following pages an effort has been made to trace in outline the history of the more important American dispensatories, and to consider to some extent the effect they have had on the use and popularity of the Pharmacopœia, and on the progress of medicine and pharmacy in general.

In an article, limited as this naturally must be, it will not be possible to review, or even to enumerate, all of these publications, and we will confine ourselves therefore to the enumeration of such as

have played a more or less important part, or form a natural link in the sequence of the series of text- or reference-books that have been in continuous use in this country for upwards of a century.

There appears to be more or less difference of opinion as to the meaning of the words Dispensatory, Commentary and Pharmacopœia, so that it may be well to state what is meant by these several terms, and also to point out the class of books that would properly come within the accepted definition.

The word Dispensatory is properly applied to a book containing an exhaustive but popular account of the physical properties, history and medicinal uses of drugs and preparations, that is intended to be of particular interest and use to physicians and others desiring a more or less exhaustive treatise on the origin, history and use of drugs.

Originally, the word Dispensatory was applied to a translation, with a more or less popular elaboration, of the Latin Pharmacopœias published by the several colleges in England, Scotland and Ireland. As examples of such books, we may mention the Dispensatories by Bates, 1691; Quincy, 1718; James, 1747; Webster, 1786; Duncan, 1788; Rotheram, 1794; and Duncan, Jr., 1800.

A Pharmacopœia is usually understood to be a book of formulas and directions for the preparation, recognition and testing of medicines and medicinal preparations that is published by some generally accepted authority. This authority may or may not be that of the existing government; as examples of the extremes we may mention the German and the United States Pharmacopœias.

A Commentary is understood to comprise a series of comments or annotations in explanation or elucidation of difficult or obscure passages in a book or treatise.

In connection with a Pharmacopœia this term could only be applied to a book the object of which was to explain or to elucidate the directions for making preparations or for applying the several tests that are given in the body of the Pharmacopœia.

For examples of this class of book, we will be obliged to go outside of our own country; the most accessible, probably, are The Pharmacopedia, by White and Humphrey, London, 1901, and The Handkommentar, by Schneider and Süss, Göttingen, 1902. If we review the history of authoritative books in our own country, we find that during the Colonial period, and even up to the first decade of

the nineteenth century, the Dispensatories, based on the several editions of the London or the Edinburgh Pharmacopœias, were practically the only authoritative books used or known.

The Pharmacopœias themselves were only known indirectly, the chief reason being the lack of knowledge of Latin on the part of the early medical practitioners.

The first distinctly American publication was the American Dispensatory, by Dr. Redman Coxe, published in Philadelphia, in 1806. This book, although little more that a reprint of Duncan's Edinburgh Dispensatory, had a large circulation, and was generally accepted as an authoritative work by a large number of American practitioners. The American Dispensatory was republished in nine successive editions, the latest appearing in 1831.

The American New Dispensatory, by Dr. James Thacher, was published in Boston in 1810. While the general arrangement of the contained material was along the same lines as that of the Dispensatories based on the London and Edinburgh Pharmacopœias, and much of the matter was taken from one or the other of these books, this new Dispensatory contained a number of original features. Among others, it will be found that Dr. Thacher was given permission to use the material contained in the Pharmacopœia of the Massachusetts Medical Society, published in 1808, so that this Dispensatory may properly be said to have been the first based on an American Pharmacopœia, and also the first to establish the precedent of quoting, in addition to the American, several of the foreign Pharmacopœias.

The American New Dispensatory was largely used throughout the Eastern States; it appeared in four consecutive editions, the latest in 1821. This last edition, as well as the editions of the American Dispensatory, published between 1820 and 1830, was based on, or quoted, the United States Pharmacopœia of 1820.

As is well known, the first edition of the United States Pharmacopœia was published in Boston in 1820; and while it is true that a second edition of the same book was printed in 1828, the book itself did not receive the support that it rightly deserved either from the medical practitioners or from the pharmacists.

In speaking of this first edition of the United States Pharmacopœia, in his memoirs, Dr. George B. Wood says: "The first Pharmacopœia was issued in 1820; it was creditable as a first attempt, but

was, in many respects, so defective that it failed to command general acceptance. At the end of ten years, which had been fixed on for its revision, it seemed, except in some limited localities, to have been almost forgotten."

It was no doubt due to this general lack of interest, and also to the absence of any due appreciation of the far-reaching possibilities of hasty action, that the delegates from a large section of the country failed to take any interest in either of the conventions that were held in 1830. This lack of general interest, no doubt, led to the publication of two Pharmacopœias for that year.

The Pharmacopœia published by the convention that met in New York preserved many of the inaccuracies and faults of the first Pharmacopœia. Quite an exhaustive review of this book will be found in the second volume of the AMERICAN JOURNAL OF PHARMACY, 1830, page 316.

The convention that assembled in Washington, while not numerous, was composed of earnest and able scholars, and had presented to them a very complete draft, for the revision of the Pharmacopœia, by the delegates of the College of Physicians of Philadelphia. With some slight modifications this draft was accepted and referred for publication to a sub-committee, composed of the members of the delegation from the College of Physicians of Philadelphia: Dr. Thomas Hewson, Dr. George B. Wood and Dr. Franklin Bache, who had also prepared the original draft.

Referring to the precautions that had been taken to avoid mistakes, Dr. George B. Wood says: "Before allowing the book to go to press, so desirous was the committee that it should receive the approval of all who might afterwards be practically concerned, that it was submitted to the scrutiny of the Philadelphia College of Pharmacy, which, after a careful examination by a committee, returned it with their endorsement, making, however, certain valuable suggestions of which the committee was happy to avail itself."

This committee of the Philadelphia College of Pharmacy was composed of Daniel B. Smith, Henry Troth and Dr. Benjamin Ellis.

The Philadelphia Pharmacopœia, as it was sometimes called to distinguish it from the Pharmacopœia published in New York, was published in 1831, and while it met with the approval of a number of physicians and pharmacists, was severely criticised by some individual writers.

Among the latter was Dr. Redman Coxe, who, in his "American Dispensatory," attacked some of the formulas and minor details of the Philadelphia Pharmacopœia quite severely, and appeared to favor the acceptance of the New York Pharmacopœia as the national standard.

This attack was thought to be unwarranted by Dr. George B. Wood, a member of the Philadelphia revision committee, and at that time professor of Materia Medica in the Philadelphia College of Pharmacy. Dr. Wood wrote quite an exhaustive review of the attacks (A. J. P., 1832, page 94), in which he defended the position of the Pharmacopœia and refuted many of the arguments that were used by Dr. Coxe.

It was no doubt largely due to this attack on the Pharmacopœia, in the leading Dispensatory of that time, that Drs. Wood and Bache hastened the publication of their own proposed work, the United States Dispensatory.

The motives that actuated the authors of this book, as asserted by Dr. Wood, its originator, were "to make the United States Pharmacopœia more generally known and acceptable, and thereby contribute to its universal practical recognition as the national standard."

"The United States Dispensatory was designed primarily to be a commentary on the Pharmacopœia, giving detailed accounts of the medicines it recognized and explaining and enforcing all its processes."

The general style and make-up of the book was, however, closely patterned after that of the Dispensatories previously published in this country, even so far as to include and comment on the preparations of the London, Edinburgh and Dublin Pharmacopœias. It was largely due to this unfortunate compliance with former precedent that the United States Dispensatory from the very beginning took quite a different position in the shop of the pharmacist from that intended for it by its authors.

This new Dispensatory was eminently successful in a monetary way, the first edition was sold within a year and no less than four editions were printed in the first decade.

The United States Dispensatory was practically without a competitor until 1852, when Dr. John King published his "Eclectic Dispensatory." This name was changed in the second edition to "The American Eclectic Dispensatory," and later to "The American Dispensatory."

That Dr. King, in the first editions of his "Eclectic Dispensatory," followed the general style of the United States Dispensatory rather closely is evident from the reviews (A. J. P., 1854, page 269; also A. J. P., 1859, page 285), and from the fact that Dr. King was proceeded against, in a court of law, by the publishers of the United States Dispensatory, who succeeded in restraining him from selling the first edition as printed.

The general scarcity of text-books on subjects relating to pharmacy and materia medica, in the earlier decades of the last century, coupled with the fact that but few pharmacists had had an opportunity for systematic training in the various branches of the natural sciences, and also, no doubt, the widely prevalent practice of giving an opinion on the efficiency and usefulness of certain household remedies, contributed very materially to make these early editions of the Dispensatories popular with pharmacists. Many, if not the majority of pharmacists, finding that the Dispensatory was based on, and included, what was to them the most essential features of the Pharmacopœia, never felt or appreciated the need or use of the latter book.

That the popularity and use of the Dispensatories has long been considered a menace to the progress of pharmacy along scientific lines is evident from the written opinions of a number of the earlier leaders of the pharmaceutical profession.

Prof. William Procter was particularly impressed with the importance of this fact, and as early as 1851 advocated a reduction in the price of the Pharmacopœia with a view of making the current edition of the Pharmacopœia more popular among pharmacists and students. An extract from his review of the, then, newly published Pharmacopœia may not be out of place here, foreshadowing, as it does, the hopes that prompted the articles referred to in the opening paragraphs of this paper:

"We cannot leave the subject without recording our opinion in favor of a cheap duodecimo edition of the Pharmacopœia, so that every apothecary, physician and medical student can have a copy and become familiar with the work. A large majority of the physicians and apothecaries in this country know nothing of our pharmacopœia except as they learn it through the dispensatories, where it is so mixed up with the British Pharmacopœias as to frequently confuse both physician and apothecary." (A. J. P., 1851, page 397.)

It was largely, if not entirely, due to the direct efforts of Professor Procter, in this direction, that the Pharmacopœial Revision Committee published in 1855 the small paper (duodecimo) edition of the Pharmacopœia. It was also due to Professor Procter's personal solicitation that the convention for the revision of the Pharmacopæia, in 1860, fixed the price of the coming Pharmacopœia at the really nominal price of $1.00 a volume. But at even this very low price it could not be said that the Pharmacopœia was really a popular book, or that it was generally used by the retail pharmacist in his routine work.

To the casual observer it would appear that there was quite an improvement in this respect, after the publication of the 1870 revision of the Pharmacopœia, when the new Pharmacopœia was actually to be found on the work table of a large number of retail pharmacists. The true reason for this was not, however, to be found in any intrinsic feature of the Pharmacopœia, but in the fact that the United States Dispensatory had not been held up to the very high standard of excellence that had characterized the previous revisions of that book. In explanation it might be said that Dr. Franklin Bache had died in 1864, and that the remaining author, Dr. George B. Wood, had retired from any active participation in the duties of his profession, and could not be expected to be sufficiently in touch with the advances, in the several lines, to personally supervise so extensive a revision.

That pharmacists had not advanced sufficiently to do without a more extensive treatise on subjects relating to their profession is evident from the ready sale that the first edition of the National Dispensatory (published in 1879) met with.

The first edition of this work, said at the time to have been a very large one, was entirely sold out within ten months of the day of issue, and the book itself was out of print for several months before a second edition could be prepared.

The popularity and sale of the Dispensatories was also greatly favored by several features peculiar to the Pharmacopœia of 1880.

It may be well to review some of these features and the reasons for their introduction, as they are quite as important now as they were then.

For some time prior to the meeting of the Convention, in 1880, it had become the custom of speaking of, or referring to, galenical

preparations as being of a certain per cent. strength; then, too, the desirability or the necessity of introducing additional assay processes for drugs of vegetable origin, and to define certain limitations in terms readily understood, appeared to make it desirable that the preparations be made by some method of weight, or of weight and measure, so that the finished preparation would have some definite, readily understood and easily remembered relation to the products of which it was composed. Unfortunately, the objections to the metric system of weights and measures was still strong, and, as a compromise, parts by weight were agreed on as the alternative.

This decision was not in keeping with the general practice, followed in this country as well as in England, of measuring liquids and weighing solids, and was strongly resented by a large number of pharmacists.

In addition to this the sub-committee having the publication of the Pharmacopœia in charge made the very serious mistake of deciding on a relatively high price for the book.

These two points, parts by weight and abnormally high price, were no doubt the more important factors that tended to make the Dispensatories once more pre-eminent with the rank and file of American pharmacists.

It should also be borne in mind, however, that the Dispensatories, in addition to translating parts by weight into definite formulas, had been thoroughly revised and had been brought fully up to date, as far as was possible with books of this particular type, and were, in addition to all of this, widely advertised by the respective publishers.

It is quite true that one of the most objectionable features of the 1880 Pharmacopœia, parts by weight, was modified in the revision of 1890, but it is also true that the introduction of metric weights and measures was rather in advance of the times and practices, very few pharmacists having acquired a practical knowledge of the metric system of weights and measures, few indeed using them in their routine work.

In conclusion, it might be said that there are other and very weighty reasons why the Pharmacopœial Revision Committee should not betray the trust that has been placed in it by the National Convention, as did the Revision Committee for 1870.

One, and one of the very important, reasons is the fact that since

the publication of the 1890 Pharmacopœia many States have enacted pure food and pure drug laws, and in almost all of these the United States Pharmacopœia is quoted as the standard for the purity and strength of the drugs and preparations enumerated by it.

Being, therefore, practically embodied in the statutes of these several States, it would appear imperative that the Pharmacopœia be continued as simple and direct as is compatible with an exhaustive treatise.

If any one will copy from one of the Dispensatories or other books, the Pharmacopœial formulas for, let us say, Fowler's solution, compound licorice powder and the compound tincture of benzoin, with the alternative formulas, as given *in extenso*, he will readily appreciate how easy it would be for a lawyer of but average ability to make such formulas appear ridiculous.

How different, and even misleading, these formulas appear when an attempt is made to make the alternative formulas fit in with convenient quantities is evident from even a most casual inspection of the latest edition of the British Pharmacopœia.

The only remaining alternative, the exclusive use of troy or avoirdupois weights and liquid measures, would be a serious retrogressive move, would prove a hardship on all that have accustomed themselves to think of galenical preparations as having a certain per cent. strength, and would also detract no little from any claims that the pharmacist might make to being classed as a professional man.

In summing up the present situation it might be said that, if we as pharmacists wish to be benefited by the giant strides that science is taking along all lines of thought and investigations entirely regardless of us as individuals, we must begin to realize that we must ourselves come in closer contact with the requirements of the times or fall by the wayside. We must appreciate that we cannot take part in twentieth century progress hampered as we are with eighteenth century ideas and methods.

To appreciate the work that is being done for us by others, we must thoroughly understand their object and their methods, and we must also realize that if we wish to continue as beneficiaries of any particular line of work we ourselves must be willing and able to take an active part in the development and advance of that particular line.

CALCIUM GLYCEROPHOSPHATE.

By H. B. Eigelberner.

Glycerophosphoric acid was discovered in 1840 by Pelouse, who obtained it by interaction of anhydrous phosphoric acid and glycerin. (American Journal of Pharmacy.) The formula being $C_3H_9PO_6$, consisting of a molecule of glycerin, a molecule of phosphoric acid, a molecule of water being set free in the active union.

Glycerin + Phosphoric acid = Glycerophosphoric acid + Water.

$$C_3H_5(OH)_3 + H_3PO_4 = C_3H_9PO_6 + H_2O$$

It was, however, not until 1894 that the salts of the acid were introduced in medicine by Dr. Albert Robbin of Paris. Dr. Robbin discovered them in Dr. Brown Sequard's Orchitic Extract, and declared them to be the active principle of that famous "Elixir of Life." Chemically they are compounds of various bases with glycerophosphoric acid. The rationale of the use of glycerophosphates is that they contain phosphorus in the same state as it exists in the nerve tissues of the body, and constitutes, therefore, a natural form of administering phosphorus, it being at once assimilated without further change. This is based upon the theory that the lecithin of food is converted into glycerophosphoric acid before assimilation, the theory resting upon the fact that the glycerophosphate salts are found in Orchitic Extract and in the extract or nerve tissue generally. (*American Druggist.*)

A. and L. Lumiere and F. Perrin have succeeded in preparing glycerophosphorous acid by treating a slight excess of glycerin with phosphoric trichloride, keeping the mixture cool. The hydrochloric acid formed is removed from the mixture by means of moist silver oxide, after filtration from the AgCl thus formed, the glycerophosphorous acid is saturated with a base, such as lime, and the excess of glycerin removed by means of alcohol, or the original acid mixture may be directly neutralized with lime, evaporated at a low temperature and then treated with alcohol, which removes calcium chloride and glycerin, but precipitates calcium glycerophosphite. Free glycerophosphorous acid has not been isolated, since it tends to saponify on evaporating its solutions. (Proceedings of the Pharmaceutical Association, 1902.)

A good method of manufacture for calcium glycerophosphate is that proposed some years since by Portes and Primier in the *Repertoire de Pharmacie.* (American Journal of Pharmacy.)

3 kilos phosphoric acid, 60 per cent.
3 kilos 600 grammes glycerin (sp. gr. 1·24).

Mix together and keep at a temperature of 100–110° C. for six days, agitating three or four times daily. The second day it commences to color and emit fumes; the fifth day it will have turned brown and ceased to fume; on the seventh day it is allowed to cool, and is then viscous and transparent. After cooling, the free acid is neutralized by mixture of 500 grammes calcium carbonate in 2 kilos of water, and allowed to settle two or three hours, when more of the chalk mixture is added and the process repeated until all the acid is saturated, which generally takes about two days. The mixture is filtered, and the filtrate exactly neutralized by means of 90 per cent. alcohol. The precipitate which forms settles very rapidly; after about an hour the supernatant fluid is decanted, the precipitate is washed and drained. It is then redissolved in cold water, filtered and evaporated at a low temperature. The salt thus obtained is a white crystalline powder, soluble in 15 parts of cold water, almost insoluble in boiling water, insoluble in alcohol.

The reactions involved in the manufacture of calcium glycerophosphate are represented by the following equations:

(1) Glycerin + Phosphoric acid = Glycerophosphoric acid + Water

$$C_3H_5(OH)_3 + H_3PO_4 = C_3H_9PO_6 + H_2O$$

(2) Glycerophosphoric acid + Calcium hydroxide + Water =

$$C_3H_9PO_6 + CaOH + H_2O =$$

Glycerophosphate of calcium

$$C_3H_8CaPO_6 + 2\ H_2O$$

The theoretical amount of calcium oxide in calcium glycerophosphate is, therefore, about 22·66 per cent.

The estimation of this ingredient (calcium) is the keynote of the examination of calcium glycerophosphate, for if true glycerophosphoric acid is not formed in the first reaction, the free phosphoric acid left uncombined will require a larger percentage of calcium for neutralization, and will thus be shown by this determination. A sample of an English brand of calcium glycerophosphate examined contained 33·05 per cent. of calcium oxide and was slightly acid in reaction. This would tend to prove the above assumption.

In estimating the calcium, I followed the usual method as given

by Fresenius—precipitating as the oxalate and weighing as the oxide.

A number of samples examined showed:

Calcium oxide: 21·6 to 22·5 per cent.

Chlorides and sulphates: Traces—small amounts.

Solubility tests: About as given in preceding parts of paper.

Reaction: Slightly acid—to somewhat alkaline.

Physical appearance: From bulky, white powder to small pearly white crystals.

The above examination is not exhaustive, but is rapid, approximately accurate, and enables the pharmacist to arrive quickly at comparative valuations between different samples of calcium glycerophosphates.

CHAPMAN & SMITH COMPANY, Chicago.

RESEARCH IN MANUFACTURING PHARMACY.

BY HENRY KRAEMER.

The original investigator has always been assured honor and a more than passing record of his work, the permanence depending upon the true significance or value of his achievements. At the present time the research worker has, in addition, a chance to win some of the largest prizes. Not only are specific sums available as in the Nobel prizes, but other funds are at the command of investigators, as those set aside by the Carnegie Institution. Moreover, there are opportunities on every hand, in universities as well as in manufacturing laboratories, for the right men to conduct research and make great discoveries.

Many remarkable discoveries have been made by those connected with universities. In recent years very many of these discoveries are due to the impetus as well as financial assistance and facilities of the laboratories of large manufacturing houses. The many alkaloids of cinchona, opium, etc., or the constituents of many of the volatile oils would probably never have become known were it not that tons of material have been worked up in large manufacturing laboratories and the material placed at the command of research workers.

Not only is this true, but we are also much indebted to some of these manufacturing firms for very valuable information which they

are publishing as a result of their own researches in addition to giving condensed summaries of the progress in the different fields in which they are particularly interested. Some of these firms are, furthermore, willing to conduct investigations at the suggestions of responsible persons. It is not unusual to find in the semi-annual reports of Schimmel & Co. the results of researches of this kind. In the last report (October–November, 1903) we read:

"Prof. Dr. E. Strasburger, of Bonn, while on a visit to the Riviera this spring, was kind enough to call our attention to some plants growing there which in the fresh state are extremely fragrant. At our request Prof. O. Penzig, of Genoa, very willingly took the trouble of procuring us fairly large quantities of these herbs in a half-dried condition, and he has thereby enabled us to make some trial distillations. We avail ourselves of this opportunity to express again to both gentlemen our very sincere thanks for the pains they have so kindly taken.

"Although the distillations have given no results which are useful for practical purposes, as the aroma was totally destroyed during the drying and the distillation, and the distillates in no case shared the characteristic odor of the fresh plant, we desire to mention here the properties of the oils obtained."

Then follows a brief account of the distribution of the following plants: *Psoralea bituminosa* L., *Inula viscosa* Desf., and *Helichrysum angustifolium*, Sweet, and the analytical data of the oils yielded by them.

A very interesting part of this same report of Schimmel & Co. is the article contributed by Prof. Dr. R. Kobert, Director of the Institute for Pharmacology and Physiological Chemistry of the University of Rostock, on "The Pharmaco-therapeutics of the Æthereo-oleosa." He divides these into the following groups: (1) Odor-corrigents; (2) Taste-corrigents; (3) Stomachics, digestants and carminatives; (4) Uterine remedies, emmenagogues and abortifacients; (5) Diuretics; (6) Diaphoretics; (7) Antihydrotics; (8) Antiseptics; (9) Leukotactics; (10) Antiparasitics; (11) Antidotes; (12) Dermerethistics; (13) Excitants; (14) Sedatives and narcotics, and (15) Expectorants.

This article is full of good common sense and the apothecary should know the facts and transmit to the public. Under odor-corrigents, for instance, Dr. Kobert says:

"Although we physicians may preach ten times *mulieres bene olent, si nihil olent*, the weaker sex will continue to buy perfumes and to enjoy them. We must be content if only poisonous substances are not allowed to be added to these mixtures. But we will never consent to the so-called improvements of

the air in the sick-room by *fumigating powders* and *fumigating essences;* on the contrary, we will make it clear to the rising generation, with our utmost energy, *that constant renewal of air is the best odor-corrigent of the sick-room.* In the same manner, patients who suffer from bad-smelling breath should not go to perfumery shops, but to *the dentist*, or *the specialist for the nose or the lungs.* Even for healthy persons, perfumes are only admissible in homœopathically minute doses."

The reports of Schimmel & Co. are invaluable and have contributed much to a healthful development of the essential oil industry, both from technical and medical points of view.

The annual reports of Merck & Co., on "The Advancements of Pharmaceutical Chemistry and Therapeutics," have also been important contributions to pharmaceutical and medical literature. The present report, issued last July, is an epitome of the researches for 1902, but contains much information that even yet has not become thoroughly disseminated among the professions. The papers by Prof. R. Kobert on "Ipecacuanha and its Active Principles" are referred to, and it is interesting that both he and Carl Lowin, a student of Kobert, confirm the investigations of Paul, Cownley and Wild (see this JOURNAL, February and March, 1901), that emetine and cephaeline act in a distinctive manner, emetine giving rise mainly to expectoration, whilst cephaeline induces prompt and facile vomiting.

R. B. Wild has recommended the use of either alkaloid in the place of the galenic ipecacuanha preparations, since the latter contain a variable proportion of alkaloid, according to their origin (*i. e.*, whether Rio or Carthagena is used); whereas the alkaloids possess a precise therapeutic value. The hydrochlorate and hydrobromate of emetine are available for use as expectorants, depressing media or emetics. The author employs a very permanent solution of 0·06 gramme of the hydrobromate in 30 c.c. of 20 per cent. alcohol and prescribes of this 5–20 drops to induce expectoration and depression, whilst 2·0–5·0 c.c. serves as an emetic dose. As a substitute for Dover's powder, Wild employs a solution containing 1 per cent. morphine and $\frac{1}{500}$ per cent. hydrochlorate of emetine. Hydrochlorate of cephaeline is less active in affections of the air-passages than the emetine salts. Its emetic properties are so intense as to render it difficult to properly adjust the correct dosing.

The "Ephemeris of Materia Medica, Pharmacy, Therapeutics and Collateral Information," by Dr. E. H. Squibb, contains brief comments on the advances of the year ending July 1, 1903. Like the preceding firms' publications, "Ephemeris" is sent to all those who are supposed to be interested in its contents. The first paragraph in this monograph is well worth publishing nearly entire, as for some

time there was a disposition to reason by analogy concerning the merits of every new compound and there has thus resulted confusion.

"It should be gratifying to the medical profession in general, but especially to the scientifically inclined, to learn that there are increasing evidences from many quarters that new agents now offered are submitted to a far more critical preliminary test before presenting to the profession for trial than ever before, because the profession is declining to accept unsupported overtures. This fact has surely had a wholesome effect on those who would press forward novelties before establishing their worth on scientific lines, for a much fewer number of products have been presented to the attention of physicians than ever before. Those which have come forward have had much more reason to exist and receive attention, even though they may finally fail to accomplish the promised results. The profession, therefore, is now much more encouraged to take up a new agent when presented on rational lines."

While the "Ephemeris" by Squibb & Sons is almost entirely devoted to a review of the progress in therapeutics, there are some statements of general pharmaceutical interest. Under acetic acid the statement previously made is repeated, viz., "that a 10 per cent. acetic acid menstruum is quite the equal of a 41 per cent. alcoholic menstruum for the extraction and preservation of the medicinal properties of drugs." Six other fluid extracts have been experimented with, using acetic acid as a menstruum. Among these is opium, which has been standardized to contain not less than 13.5 per cent. of morphine. "As a concentrated solution of opium containing all the valuable medicinal constituents without any of its nauseating or odoriferous properties, it has much to commend it and deserves the attention of all practical workers."

The newest publication from a manufacturing house is called "Digest of Researches of Laboratory Workers," and is published by Smith, Kline & French Co. It has been edited by Joseph W. England, and differs from the previous publications referred to, in that it consists almost entirely of abstracts of the published papers of those employed in the laboratory of this firm. The statement is made that upwards of 200 "papers," embracing nearly 500 pages of printed matter, have been published in the various technical journals by these laboratory workers. The range of subjects is wide, including, besides the examination of pharmacopœial drugs, curious oils, artificial foods, chemical synonyms, etc. While some of the conclusions in some of the papers should be criticized on the basis of the facts given, nevertheless, taking the collection of papers as a whole, they are creditable. This pamphlet will appeal par-

ticularly to the retail pharmacist, and will, no doubt, accomplish much in causing him to test his purchases.

The pages of this JOURNAL, as well as other pharmaceutical and technical journals, contain many papers contributed by the research workers of various manufacturing houses. In many instances these workers are graduates of colleges or universities. These papers do not necessarily always contain all the information that might be given. They have been, nevertheless, beneficial in every way to the authors, and the latter are deserving of the thanks of the readers. I have heard it said that some manufacturers do not care to have their laboratory workers publish the results of their findings of market conditions, and that those who want this information can find it out for themselves. It should be said that if others want the information for commercial purposes, they certainly must find it out for themselves whether anything is published or not. In other words, in commerce nothing can take the place of a man's own knowledge of a subject or a specimen, and no other person's analysis of another lot will help him.

There are three benefits that come from publication of research work:

(1) The first benefit is to the research worker himself. In going over his work and marshalling his facts he is compelled to check his results, find out his errors and perfect his methods.

(2) The next benefit is one as it affects the race and serves to develop a literature, consisting of records of man's experience in the progress of civilization.

(3) The last benefit is one as it affects the community and serves to protect the public by the enlightenment of the physician and pharmacist.

Investigations on the nature and quality of drugs are giving us new methods for their valuation. Experience is showing the physician that he must depend upon the intelligent pharmacist for his medicaments of standard quality. Furthermore, the retail pharmacist is responsible for the quality of the medicines he dispenses and the drugs he sells, and by testing his purchases he not only protects himself against the unscrupulous dealer, but also co-operates in so doing with the honest wholesaler. There are mistakes made by the latter which require correction just as much as the mistakes of the physician, and we thus cannot fail to see the dual responsibility of the retail pharmacist.

The object of this paper has been to call attention to the value of not only research, but the publication of the results of original investigations, and to indicate by reference to some recent publications the part that the manufacturing pharmacist has in this beneficent work.

THE ITALIAN OLIVE OIL ON THE AMERICAN MARKET.

By A. Augusto.

The problem of olive oil in America, from the medicinal point of view, has to be considered carefully and without any preconceived idea.

Olive oil is olive oil, nothing else but the expressed oil of olives. Therefore, its purity and taste depend absolutely upon the method employed in making, refining and preserving it.

In America is enrooted the idea that only Lucca, in Italy, produces good olive oil, and consequently, on the American markets, any oil which would not have written in big letters on the can or label the magic word Lucca, would not be considered.

I am talking to business men, and I suppose that each one of you is proud of his store and his own preparations. Exactly the same feeling animates the producers of olive oil in Southern Italy. They are simply proud of the fine quality of their oil, and they dislike the idea of misrepresenting their goods, giving them the maternity of Lucca, only to meet and overcome the unjust stubbornness of the American markets.

The fine quality of their olive oil does not need any advertisement; generally the demands are greater than the production, because other nations, France especially, are too glad to have it, and let it pass in the markets of the world as their own production.

To provide the American markets with olive oil there is left only one way: to pass under the guns of the so-called importers of New York and exporters of Leghorn.

Both those *intercommercial elements* do their best to enlarge their profit, and consequently the greater quantity of *the would be* Italian olive oil is manufactured (the word adulterated is not enough) in New York, while when ordered directly from Italy the oil merchants over there send here the lowest degree to meet the great American cry, "cheap, cheap."

There are many ways of making olive oil, but the oldest, slowest and most expensive method has uncontested preference to the new, quick and economical methods.

The old method consists in picking the olives before they are too ripe, grinding and pressing them, separating the oil from the muddy water and depositing it in proper vessels until, with the coming of the warm season, it becomes clear. Then, after being decanted two or three times at intervals of a few weeks, it is ready to go into commerce.

I said that this method is very expensive, and it is so. The olives are picked by hand because, being not ripe, they are attached firmly to the plant. They must be ground and pressed the next day, and three men and one horse are required to work out 20 or 25 bushels of olives in one day, producing an average of 12 gallons of oil, and fresh olives do not give as much oil as those which have been kept for a few weeks. Besides all these expenses and losses one has to wait almost a year before his oil has reached the grade of maturity and purity required for a first quality article.

Any one who can afford to make his oil in such a manner and wait indefinitely for selling it, surely will have his price, because olive oil, when properly made, does not deteriorate with age, but improves, while oils made by modern methods become rancid and putrid when summer heat comes.

That explains why in Italy in two villages at a few miles distance, the price of olive oil varies from 12 to 25 cents per litre.

Something must be said about properties and elementary tests of olive oil; but this is not an easy task for me, considering that olive oil is largely subject to adulteration, and I am talking to persons who, perhaps, have never had a chance to taste a first quality of it.

Of course, for an Italian who, as the one who has the honor to address you, has had chances to plant and cultivate olive trees, who has picked olives, manufactured oil, and uses largely of it, there are three tests to be applied in the assay of olive oil, namely, looking at it, smelling it, and tasting it. He knows that fine olive oil must be of a pure, clear, light amber color, without any trace of green; odorless, except that little pleasant smell proper of olive oil, and of a fresh, fragrant, soothing taste.

A very simple test of olive oil can be made in the following way:

On a plateful of hot boiled vegetable, as winter salad, put salt and

one or two tablespoonfuls of the oil. Pure olive oil will not give any disagreeable smell and the dish can be eaten, according to my taste, with pleasure; but impure or second quality of oil will give out, under these circumstances, a displeasing odor, and a dry, disagreeable sensation is produced in the throat if an attempt to swallow it is made.

But here comes the question: How can the Americans obtain pure Italian olive oil?

The only answer that I can give is very simple: Buy from the producers and reject the so-called Lucca oil, because Lucca can hardly supply herself with her own oil.

In the large Italian cities, in spite of a law against adulterations, pure olive oil cannot be obtained so easily. The law is not complete because it tends to prevent only adulterations injurious to health. So the majority of the people are often compelled to receive their supply of oil for domestic use directly from the country, paying a good price for it.

The Americans cannot do the same, but they can encourage direct importation.

A PRESCRIPTION FILE.

By J. W. P. Outerbridge.

This file is constructed of a brass rod (No. 8), and is held in a rigid, perpendicular position between two iron brackets (or shelves) by the aid of three nuts—*a*, *b* and *c*, as shown in the figure. Into the lower end of the wire a hole *d* is bored.

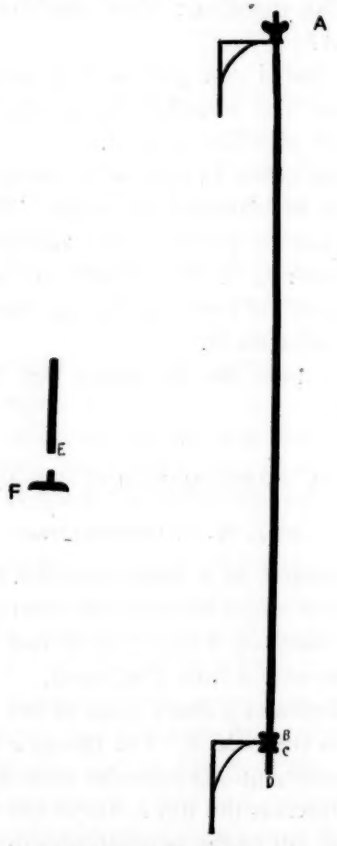
The desk file consists of a short piece of No. 8 wire with an inner thread *e*, screwed to the base *f*. The thread *e* is similar to that of *a*.

To transfer the prescriptions from the desk file to the permanent or stationary file, unscrew the nut *a*, curve the wire slightly so as to bring the upper end out of the bracket, unscrew the desk file from its base and screw onto the permanent or stationary file. At the close of the year, unscrew the nuts *a* and *c*, remove the file from the brackets, unscrew the nut *b*, insert a pointed wire into the hole *d*, transfer the year's prescriptions to this new file, and set up the original file for use again.

I would suggest that the files for two or three years back, which are kept at hand for renewing prescriptions, be held in a rigid, per-

pendicular position by hanging them between iron brackets, or between two shelves, and if convenient an easily movable curtain may be hung from the shelf; old files when put away could be protected from dust in this way.

Do not point the desk file, but use a punch for the prescriptions. This has two advantages: (1) It prevents the wear and tear of the



A Prescription File.

centre of the prescriptions; (2) the prescriptions can be moved on the file so much more easily that time is saved when referring to old prescriptions. When renewing a prescription, the place may be held open by means of a wooden clip. And a piece of card-board filed every month will probably aid in referring to a prescription.

Some of the advantages of this file are the easy method of trans-

ferring the prescriptions from the daily file to the yearly file. When referring to prescriptions in the early part of the year the file is held permanent and there is not the danger of a sharp hook coming down on one's head; and the prescriptions being punched and held out of contact with anything, there is very little friction to overcome when referring to old prescriptions.

HISTORICAL NOTE ON THE AMERICAN JOURNAL OF PHARMACY.[1]

By Henry Kraemer.

Entering now, as we do, upon the last quarter of one century of The American Journal of Pharmacy's existence as a regular publication, it may be of interest to review briefly its history up to this time, and in doing this I shall draw rather freely upon the "Historical Notice" published in connection with the General Index in 1873.

The Journal of the Philadelphia College of Pharmacy was established in 1825, and the Publication Committee consisted of Dr. Samuel Johnson, Henry Troth, Solomon Temple, Ellis H. Yarnall and Daniel B. Smith, the latter of whom was chairman of the committee, and practically acted as editor, and to whom belongs the credit of establishing a high standard for the *Journal*. Too much credit cannot be given to the members of the committee, who laid the foundation along lines which it has never been considered advisable to depart from. They were all men of ability, and their work reminds one of the work of those who drafted the Constitution of the United States.

Four preliminary numbers were published up until 1829, when the Publishing Committee was reorganized, as follows: Daniel B. Smith, Charles Ellis, S. P. Griffiths and Dr. George B. Wood, with Dr. Benjamin Ellis as the editor. At this time the publication of the regular volumes began, and since then the publication has been uninterrupted. From now on up until 1852 four numbers constituted a volume, except in 1847, when five numbers were published. On the decease of Dr. Ellis, in April, 1833, Dr. Robert E. Griffith was appointed editor, and during his incumbency in 1835 the Publishing Committee was reorganized by the addition of Dr. Bache,

[1] This is part of the annual report of the editor of The American Journal of Pharmacy to the Philadelphia College of Pharmacy, March 28, 1904.

Elias Durand, W. Hodgson, Jr., Joseph Scattergood, John C. Allen and Dillwyn Parrish, and the name of the *Journal* changed to its present title, THE AMERICAN JOURNAL OF PHARMACY.

In October, 1836, on the resignation of Dr. Ellis, Dr. Joseph Carson was chosen editor, and he associated with himself Dr. Robert Bridges as associate editor from 1839 to 1845, and from 1848 to 1859 Prof. William Procter, Jr. During the editorship of Dr. Carson several circumstances transpired to improve the scientific character of the JOURNAL. The invitation to the Philadelphia College of Pharmacy from the Official Committee to participate in the revision of the U. S. Pharmacopœia in 1840 gave an impetus to pharmacy in Philadelphia which resulted in the establishment of the Pharmaceutical Meetings of the College, which were then, as now, a source of original contributions.

In 1839 Joseph Scattergood resigned from the committee. In 1842 the names of Ambrose Smith, William Procter, Jr., Augustine Duhamel and William R. Fisher were substituted for those of Daniel B. Smith, J. C. Allen, W. Hodgson, Jr., and Dillwyn Parrish, resigned. In 1845 Messrs. Wood, Bache and Durand retired from the committee, and Thomas P. James was added, and in 1846 Dr. Bridges was added. In 1848 the following committee was elected: Daniel B. Smith, Dr. Bridges, Charles Ellis, Ambrose Smith, Dr. Carson and Professor Procter. In 1849 Edward Parrish was elected in place of Ambrose Smith, and in 1850 A. B. Taylor in place of Daniel B. Smith.

On the retirement of Dr. Carson in July, 1850, William Procter, Jr., was chosen editor, and the Publication Committee consisted of the same members, there being no change until 1861, when John M. Maisch was elected in place of Dr. Bridges, and in 1870, when Thomas S. Wiegand replaced Edward Parrish.

In 1848, while Professor Procter was assistant editor, an editorial department of the JOURNAL was started, and, during his incumbency as editor, was a marked feature. From 1853 to 1870 six numbers constituted a volume, and in 1852 an advertising sheet was introduced, and the price increased from $2.50 to $3, whilst the reading matter was nearly doubled. It was at this time that the American Pharmaceutical Association came into existence, and for several years the minutes of the proceedings and most of the papers were published in the JOURNAL almost verbatim, although no official con-

nection existed. Ever since then the JOURNAL has sent a representative to the meetings of the Association, and given a full account of its proceedings. The JOURNAL made notable progress until the War set in, when it became very much hampered in its work, but the editor and committee persevered through this crisis, and in 1865 a reaction set in, which finally culminated in the election of a business editor, Henry H. Wolle, in 1871, being chosen to fill this position. Another change brought about by Professor Procter was that of making the JOURNAL a monthly publication, which began in 1871.

On the resignation of Professor Procter in April, 1871, due to failing health, Prof. John M. Maisch was chosen his successor, the Publication Committee chosen at this time consisting of the following members: Professors Procter and Maisch, and Messrs. Bullock, Taylor and Wiegand. A regular organization of the committee was effected, and a chairman, secretary and treasurer selected. In March, 1872, James T. Shinn was elected in place of A. B. Taylor, and in 1874, on the death of Professor Procter, Henry N. Rittenhouse was chosen a member of the committee. Professor Maisch was assisted in his work as editor by the following collaborators: Geo. M. Beringer, Joseph W. England, Frank X. Moerk and Professors Remington, Sadtler and Trimble. On the death of Professor Maisch, Prof. Henry Trimble was elected editor, and the Publication Committee reorganized as follows: Henry N. Rittenhouse, Samuel P. Sadtler, Wallace Procter, Joseph W. England and the editor. On the resignation of Mr. Wolle in 1894, Florence Yaple was chosen his successor, as business manager, at the suggestion of Professor Trimble.

On the death of Professor Trimble in 1898, the present editor was chosen. In March, 1900, the Publication Committee was increased to seven members, and Dr. Richard V. Mattison and Prof. Joseph P. Remington were the additional members chosen.

As I have stated in a previous report, every effort is being made to make the JOURNAL true to its name; that is, an *American* journal of pharmacy, which will encourage research by American pharmacists, and which will at the same time be of direct value to the profession at large, and an influence for the betterment of the condition of pharmacy in America.

CORRESPONDENCE.

FEBRUARY 25, 1904.

Prof. Henry Kraemer.

DEAR SIR:—I was very much interested in your article in the December number of the AMERICAN JOURNAL OF PHARMACY on "The Conservation and Cultivation of Medicinal Plants."

You mention the fact that the supply of drug plants is becoming exhausted, and that they will have to be supplied by cultivation.

I wish to make a few statements of my observation of the medicinal plants growing in California. As we have in the State nearly all conditions of climate and soil that can be found in most any part of the north temperate zone, I think the State is capable of producing any plant found in the same zone and a great many of the torrid zone.

Plants that are brought into the State and transplanted in the proper places, where conditions are favorable, seem to thrive as well and oftentimes better than in their native soil. The eucalyptus in the South grows well and very rapidly; it is planted around fields for wind-brakes and sometimes in groves for fire-wood. A grove of four years' growth will furnish cord-wood—hardly long enough for an eastern tree to obtain a growth sufficient to be transplanted. The phytolacca also obtains a larger size here than in the Eastern States. This plant was evidently brought out by early settlers, but at the present time is growing wild. The castor-oil plant also attains a large size here.

As to the conditions existing here, in the South we have the hot, sandy desert, well adapted to the cactus and to any of the Cucurbitaceæ, as the colocynth. At Indio, in the dry sea bed, musk-melons and watermelons thrive when irrigated. Near the mouth of the San Joaquin River, is light, sandy soil suitable for such as the sassafras, while in the immediate neighborhood of Humboldt Bay it is always cool and damp; it is so wet that grain cannot be ripened, but the dairymen grow green fodder for their stock every month in the year.

In this valley we occasionally have a freeze; at the present time it is quite pleasant here, the grass and grain being quite green, while six miles above here there are 4 inches of snow. We also have the high mountain ranges, with an occasional frost in the valleys and snow nearly all the year on the peaks. Along the coast is the sea

fog. In Ventura and Santa Barbara Counties the bean and beet crops are grown with the aid of the moisture of the fogs.

So you see we have the proper conditions for plants needing a dry, hot climate, a damp, cool climate—cold winters and hot summers, or an even climate the year around, such as is found around San Francisco Bay.

At Santa Barbara is a private botanical garden in which it is said plants from all parts of the world are growing. I have seen the garden, and the appearance will bear out the statement.

There are several large and successful seed farms in the State, and the seeds are considered of fine quality. Near Haywards is a peppermint farm, producing oil of peppermint. Olive oil is also produced in large quantities in the State; the quality is as good or better than the Italian.

In the hills near Oakland, the camphor tree is growing wild; also bamboo; the camphor tree was planted to produce camphor for the market, and I suppose the bamboo was brought over at the same time. The camphor tree grew and flourished and produced camphor, but it cost from $1.50 to $2.00 per pound, when camphor was selling in the market at 50 to 60 cents per pound. While the tree was a success, the business was not; but at the present indications, if camphor continues to advance and labor becomes cheaper, California will be able to hold the camphor market in check, and not be at the mercy of the Japanese government. At the present time, the tree springs up in the unplowed field, like sassafras does in New Jersey. It is found there now as a bush of a few feet in height.

Following is a list of the medicinal plants I have observed growing here: Peppermint, pennyroyal, cascara sagrada, balm of gilead, horehound, mustard (cultivated), catnip, phytolacca, stramonium, tansy, quercus (yielding nut galls), yerba santa, yerba buena, fennel, spikenard, rumex.

At Vallejo I have seen rank growths of fennel in the streets near the water fronts; in this county I have observed the alder, which in the East grows as a bush along the water courses, growing like a tree, having a height of 35 to 40 feet and a diameter of 8 to 10 inches.

With most plants in this State, it is not a case of "Will they grow?" but "Will it pay to grow them?"

Yours very respectfully,

W. H. GUEST.

WILLITS, CALIFORNIA.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A METHOD FOR THE IDENTIFICATION OF PURE ORGANIC COMPOUNDS. By a systematic analytical procedure based on physical properties and chemical reactions. Vol. I containing classified descriptions of about 2,300 of the more important compounds of carbon with hydrogen and with hydrogen and oxygen. By Samuel Parsons Mulliken, Ph.D., instructor in organic chemistry and organic analysis at the Massachusetts Institute of Technology, Boston, Mass. New York, John Wiley & Sons; London, Chapman & Hall, Limited. 1904. Large 8vo, xii + 264 pages. Cloth, $5.00.

The identification of organic compounds of all classes by the Method of the Empirical Formula; *i. e.*, depending upon a knowledge of the chemical constants, percentage, composition and molecular weight, is the method generally employed and is usually fairly satisfactory in the hands of the skilled analyst. There are, however, many other available data which have considerable significance in the identification of unknown organic compounds and on account of the ease with which many of these tests may be made should be utilized in a comprehensive scheme.

Dr. Mulliken has applied himself to this task, and during the past eight years has carefully considered the more easily determined properties of more than 2,000 of the more important organic compounds, such as qualitative elementary composition, color, melting point, boiling point, solubility, specific gravity, alkali neutralizing power and chemical behavior under prescribed conditions, and has, we believe, devised a system which not only has the merit of originality, but which we believe will be found, from a practical and technical point of view, to be simple and to yield satisfactory results.

The author has utilized Linnæan principles in creating orders, genera and species of organic compounds. The "orders" are based on the qualitative elementary composition of the compounds comprising the largest groups. Each of these then are subdivided into "genera," as aldehydes, acids, phenols, etc., depending upon the behavior of the compounds to simple chemical tests. The genera include species, which are arranged according to the increasing value of some readily determined constant, like the melting point or boiling point. Finally, under each species is given a brief systematized description of salient features having genuine analytical

significance. This system of classification is an excellent one, and as it has been in use in the natural sciences for many years with excellent results, so far as the determination of animals and plants is concerned, is probably the only satisfactory way of looking at chemicals with the end in view of finally determining an unknown organic compound. The work will not only appeal to chemists, but botanists and zoologists as well, as the evolution of organic compounds in nature is very likely in the near future to demand considerable attention from students of these branches of natural science.

In order to give our readers a better idea of the nature of the book, we give a rather comprehensive view of the contents, as follows:

Chapter I: Classification of compounds and the analytical procedure, including explanation of classification, orders, genera, divisions, sections, species; general directions for examination of unknown compounds—evidences of homogeneity; examinations of physical characteristics; determination of order; determination of genus; tabular summary of generic tests; determination of division and section; determination of species. Chapter II: Ordinal tests, including procedure for detection of the elements in organic compounds, as carbon and ash constituents; sulphur, nitrogen and the halogens; ignition with sodium; sulphur; nitrogen; nitrogen and sulphur together; phosphorus; halogens; iodine; bromine; chlorine. Chapter III: Genus I (Subord. I, Ord. I).—Aldehydes, giving generic characterization. Generic Test I; observations on test; aldehyde characteristics; analytical tables, Div. A (solid species), Div. B (liquid species), numbered specific or semi-specific aldehyde tests. Compounds reducing Tollen's reagent, acetaldehyde, acrolein, benzaldehyde, formic aldehyde, furfurol. Chapter IV: Genus II (Subord. I, Ord. I).—Carbohydrates, giving generic characterization, analytical tables and numbered sectional and specific carbohydrate teets. Chapter V: Genus III (Subord. I, Ord. I).—Acids, including generic characterization, analytical tables and numbered specific or semi-specific tests. Chapter VI: Genus IV (Subord. I, Ord. I).—Phenolic compounds, including generic characterization, analytical tables and numbered specific or semi-specific tests. Chapter VII: Genus V (Subord. I, Ord. I).—Esters, giving generic characterization and analytical tables. Chapter VIII: Genus VI (Subord. I, Ord. I).—Acid anhydrides and lactones, including generic charac-

terization and analytical tables. Chapter IX: Genus VII (Subord. I, Ord. I)—Ketones, including generic characterizations, analytical tables and numbered specific or semi-specific ketone tests. Chapter X; Genus VIII (Subord. I, Ord. I).—Alcohols, including generic characterization, analytical tables and numbered specific or semi-specific tests, Chapter XI: Genus IX (Subord. I, Ord. I).—Hydrocarbons, etc., including generic characterization and the sectional tests, analytical tables and numbered specific or semi-specific tests. Chapter XII: Suborder II of Order I.—Colored compounds of Order I, including subordinal characterization, analytical tables and numbered specific tests. Chapter XIII: Special methods, apparatus and reagents, including melting- and boiling-points, thermometric indications of chemical purity, specific gravities, color, the manipulation of small quantities and list of special reagents and apparatus. Finally there is an alphabetical index, a formula index and a color standard.

The entire work shows care and patience upon the part of the author, and is one of the most valuable analytical works which has been published. The only suggestion which might be made, and yet no doubt the author has considered the advisability of it, would be to give more than one test as a generic test. For instance, under carbohydrates the Molisch color reaction with α-naphthol alone is given. If instead of α-naphthol a solution of thymol is used in conjunction with sulphuric acid, a reddish colored solution results instead of a blue color. Both of these reactions are very sensitive and characteristic for carbohydrates.

IN MEMORIAM—J. B. NAGELVOORT.

By A. B. Lyons.

It was with a shock of surprise as well as with deep regret that I read in the Detroit morning paper of March 2, 1904, the announcement of the death of J. B. Nagelvoort. Only a few days before I had received from him a letter, dated February 22d, which showed no indication of any decline in his bodily or mental powers. It related to the subject of some researches he was carrying on, and enclosed photographs of plants of Hyoscyamus niger in exchange for some I had offered to send him of some of the wild plants of that species at Mackinac. After signing his name with free, firm

hand, he added the characteristic postscript: "Please don't call me professor!"

The end, in fact, as I learned afterwards, had come to him without warning. One week after the date of that letter, he retired to rest as usual, but it was to sleep the sleep that knows no awakening. "Heart failure" tells the whole story, so far as is known to any of us.

It was such an end as I am sure he would have coveted—with no period preceding it of declining powers, with unfinished work yet luring him on.

His life had been one of diversified experiences. Born in Amsterdam, July 14, 1843, he began work as an apothecary at the early age of fourteen. Later he attended college at Hague. About the year 1868 he received an appointment under the Dutch Government in the hospital service in the East Indies. He was stationed in Java, and occupied a position of weighty responsibility. Here he married, his wife being also a native of Holland, and here several of his children were born. His health having become impaired, he returned in 1878 to Holland, and then decided to make his home in America. He took up land in Nebraska, and for five years devoted himself to farming. This life, however, did not satisfy his higher ambitions. In 1883 or 1884 he returned to Holland to pursue further his studies in chemistry, and then accepted a position in the scientific department of Parke, Davis & Co.

From this time he became a frequent contributor to current pharmaceutical literature. In 1892–3 he made a translation for publication of Professor Flückiger's "Reactions of the More Important Organic Compounds." About the same time he contributed to the *Apothecary* a series of valuable "Notes on the Pharmacopœia," in view of the decennial revision then in progress.

In 1895 he accepted the chair of Applied Pharmaceutical Chemistry in the Northwestern University, a position he filled with distinction for two years. He then returned to Holland, and was for two years an instructor in the School of Pharmacy of the Rijks University at Leyden.

In 1901 he returned to America to accept a position with a manufacturing house in New Orleans; but his engagement there was not of long duration. Last year he found exactly the position that suited his temperament and gave opportunity for the use of his accumulated resources of knowledge and chemical skill. A labora-

tory for research was established in connection with the botanical gardens at St. Louis, Mo., where, in association with Dr. Trelease, he entered upon a line of work thoroughly congenial to him. The country suffers a distinct loss in the cutting short of so promising a career of usefulness.

Mr. Nagelvoort was a man of pronounced personality. His ideals were beyond the comprehension of a commercial age like ours, and no consideration of personal advantage ever influenced him to sacrifice one iota of them. No doubt he was not sufficiently tolerant sometimes of the views of those with whom he was associated, but his supreme regard for honesty and his absolute independence of action gained for him universal respect.

In Athens, more than two thousand years ago, Diogenes sought in vain for a single honest man. They are not less rare in this enlightened day and age, but those who knew J. B. Nagelvoort were sure that honesty was incarnate in him.

PHILADELPHIA COLLEGE OF PHARMACY.

THE EIGHTY-THIRD ANNUAL COMMENCEMENT.

The Eighty-third Annual Commencement of the Philadelphia College of Pharmacy was held in the American Academy of Music, Thursday evening, April 14th. After prayer by Rev. Cassius M. Roberts, the degrees were conferred by the President of the College, Howard B. French. Following are the names of those receiving the degree of Doctor in Pharmacy (P.D.), together with the subjects of their theses:

Name.	*Subject of Thesis.*	*State.*
Althoff, Samuel Young,	Principal Sources of Commercial Drugs,	Pennsylvania.
Baker, Howard Stanislaus,	Solanum Carolinense,	New Jersey.
Bartholomew, Arthur D.,	The Cotton Plant and Preparations,	Pennsylvania.
Bee, William Frederick,	Soft Capsules and their Preparations,	Utah.
Beyer, Albert Franz,	Phenacetin,	New Jersey.
Binder, Furman Brooke,	Eucalyptus Globulus,	Pennsylvania.
Bogert, Charles Halsey,	Caoutchouc,	New Jersey,
Boltz, Howard Hauer,	Spongiæ,	Pennsylvania.
Boyer, Howard Johns,	Gentian,	Pennsylvania.
Brockman, Martin Wm.,	Aloes,	Pennsylvania.

Name.	*Subject of Thesis.*	*State.*
Brown, Walter Eugene,	Vanilla,	Delaware.
Cameron, John Henry,	The Thyroid Gland,	New Jersey.
Cherry, Frances (Miss)	Opium,	Pennsylvania.
Chisholm, Jesse Connor,	Sodii Hyposulphis,	Texas.
Closson, Charles Steinmetz,	Why Syrups Spoil,	New Jersey.
Coombs, Harry,	A Practical Soap Cutter,	Colorado.
Crouse, Eugene Drake,	Chloroform,	New Jersey.
Davis, Elizabeth (Miss)	Mentha Piperita,	Pennsylvania.
Davis, Horace Tracy,	Coloring Agents in Pharmacy,	Pennsylvania.
Davis, John Simmonds,	Solution of Hydriodic Acid,	Pennsylvania.
Davis, Thomas Carroll,	Succinic Acid and the Succinates,	Pennsylvania.
Dittmeyer, Walter Eugene,	The Thyroid Gland and its Preparations,	W. Virginia.
Doherty, William John,	Belladonna,	Pennsylvania.
Dulin, William,	Petrogen,	Pennsylvania.
Eberly, John Shelly,	Cascara Sagrada,	Pennsylvania.
Fox, Jamella (Miss)	Acidum Citricum,	Pennsylvania.
Free, William H., Jr.,	Bases for Iodine Ointment,	Pennsylvania.
Fricke, Charles B.,	Pharmacognostical Notes,	Nebraska.
Fuller, Royston Tupper,	Gelsemium,	Nova Scotia.
Garvey, James Aloysius,	Salicylic Acid,	Pennsylvania.
Gemmill, Clarence F.,	Manufacture of Tablets,	Pennsylvania.
Gillan, James Dunlap,	Caroid,	Pennsylvania.
Grier, Robert,	Compressed Tablets,	New Jersey.
Hastings, Lorne Edward,	Saccharin,	Canada.
Hay, Stacey Merritt,	The Production of Borax,	Pennsylvania.
Hibbs, William Buckman,	Camphora,	Pennsylvania.
Jones, Levi W. S.,	Opium,	Pennsylvania.
Jones, Robert Earl,	Immunity,	Ohio.
Keeley, Henry Edgar F.,	Some Disadvantages of Compressed Tablets,	Pennsylvania.
Kilion, Rebecca E. (Miss)	Digitalis,	Pennsylvania.
Klotz, Luther Wenner,	Cryptogamous Plants.	Pennsylvania.
Klucher, John Albert,	Cinchona,	Pennsylvania.
Knouse, Ralph Edward,	Extemporaneous Capsule Filling,	Pennsylvania.
Kopp, Yocum Andrew,	Charta Sinapis,	Pennsylvania.
Kumpf, George Brenner,	Fixed Oils,	Pennsylvania.
Lafean, Wilbur LeRoy,	Stains for Pathological Work,	Pennsylvania.
Lauter, Mary Jenny (Miss)	Antitoxin,	Pennsylvania.
Lewin, Richman Garrison,	Formaldehyde,	Texas.
Lithgow, William David,	Ichthyol,	Pennsylvania.
Long, Henry Clay, Jr.,	Chloretone,	Delaware.
Long, Michael Richard,	Quercus,	Ireland.
Lovatt, James Sidney,	Pepper,	New Jersey.
McCausland, Alexander N.,	Vanilla Grass,	Pennsylvania.
McDevitt, William,	Natural and Synthetic Salicylic Acid,	Pennsylvania.
Mauger, John Harvey,	Convallaria Majalis,	Pennsylvania.

Name.	*Subject of Thesis.*	*State.*
Montgomery, John S., Jr.,	Estimation of Guaiacol in Creosote,	Georgia.
Miller, LeRoy, P. C.,	Assay of Extractum Nucis Vomicæ,	Pennsylvania.
Moore, Wilbert Jacob,	Salicylic Acid and its Action on Fermentation,	New Jersey.
Moore, Julius Shepherd,	Ginseng,	Arkansas.
Morgan, Matthias Drostan,	Formaldehyde,	Pennsylvania.
Moul, William Edward,	Dentifrices,	Pennsylvania.
Neiler, William Mackie,	Vaccine,	Pennsylvania.
Nofer, Walter Washington,	The Manufacture of Corks,	Pennsylvania.
Outerbridge, John W. P.,	Bermuda Arrow Root,	Bermuda.
Peiffer, Irwin Isaac,	A Study of the Micro-organisms in Deteriorated Kino Preparations,	Pennsylvania.
Pereira, David da Salva,	Value Determination of Drugs and their Preparations,	Dutch Guiana.
Quinn, Joseph Aloysius,	Vaccine and Antitoxins,	Pennsylvania.
Renshaw, Milli. S. (Miss),	Boiling Points,	Pennsylvania.
Rider, Joseph Albert,	Should a Pharmacist be a College Graduate?	Pennsylvania.
Robeck, Walter Henry,	Malt Extract, its Preparation and Analysis,	Maryland.
Rohrbaugh, Milton E.,	Crystallization,	Pennsylvania.
Ross, William Smith,	Ointment Vehicles,	New York.
Shafer, Frederick William,	Radium,	New Jersey.
Sharadin, Ralph Clarence,	Cod Liver Oil and its Adulterations,	Pennsylvania.
Shelly, John Culp,	Camphora,	Pennsylvania.
Shull, David Franklin,	Petroleum,	Pennsylvania.
Siegrist, George Anthony,	Hypericum Perforatum,	New York.
Spangler, Harry Albert,	Galla,	Pennsylvania.
Stonesifer, Howard A.,	Modern Pharmacy,	Pennsylvania.
Strunk, Edward Josiah,	Olea Volatilia,	Pennsylvania.
Stump, Frank Arthur,	Emulsions,	Pennsylvania.
Wachtel, Leo Michael,	Cyrilla Racemiflora,	Georgia.
Wagner, George Frederick,	Sodii Bicarbonas,	Pennsylvania.
Walter, Charles Arthur,	Rhus Glabra,	Pennsylvania.
Warshawsky, Reuben,	Urine Analysis,	Russia.
Weinberg, Charles B.,	The Opium Habit,	New Jersey.
Wertz, Harry Elmer,	An Examination of Various Pilocarpus Leaves,	Pennsylvania.
West, David MacGowan,	Sodii Boras,	Pennsylvania.
Zeledon, Jose Antonio,	Copal and Chirraca,	Costa Rica.

Following are the names of those receiving the degree of Pharmaceutical Chemist (P. C.), together with the subjects of their theses:

Name.	*Thesis.*	*State.*
Crafts, Frederick J.	Strophanthus Microscopically. .	Ohio
Curtis, Luther Barker	The Commercial Production of Turpentine	Florida
Duncan, Chester Arthur. . . .	Acetic Acid	Pennsylvania

Name.	*Subject of Thesis.*	*State.*
Schmidt, Frank Louis	Sodium Phosphate	W. Virginia
Turner, Thomas Jefferson	Nitroglycerin	Pennsylvania

The following members of the class were awarded the certificate of Proficiency in Chemistry:

Carwithen, Albert States	Pennsylvania
Gehringer, Edwin Franklin	Pennsylvania
Hirst, Ralston Sanford	New Jersey
Hoffman, Norman Boore	Pennsylvania
Keller, Charles Franklin	Ohio
Wyckoff, Elmer E.	Pennsylvania

There were one hundred members of the graduating class, and they represented various States and several foreign countries as well.

Prof. Joseph P. Remington, Dean of the Faculty, announced that the president's cup, offered first by President Howard B. French, in 1901, for high class average, had been won by the present class. The following members of the Class received the grade of distinguished: Thomas Carroll Davis, Charles B. Fricke, Millicent Saxon Renshaw, Walter Henry Robeck, Frank Louis Schmidt; and the following that of meritorious: Samuel Young Althoff, Jesse Connor Chisholm, Elizabeth Davis, Walter Eugene Dittmeyer, Clarence Franklin Gemmill, John Swift Montgomery, William Frederick Shafer, Harry Elmer Wertz.

Hon. George D. McCreary made the valedictory address, and, among other things, said: "You are living in an age in which there are new conditions, new chances and new opportunities for original research. There are great chances for you if you will put into effect what you have learned from your alma mater. Unless you use your knowledge wisely and get out of the beaten track, instead of following the line of least resistance, you will be mere machines all your lives, and will not gain the success you are all looking for. The twentieth century wants original knowledge. New men with new ideas will come on to take the place of those who have made the nineteenth century what it was."

AWARD OF PRIZES.

THE PROCTER PRIZE, a gold medal and certificate, offered for the highest general average, with a meritorious thesis, was awarded to Millicent Saxon Renshaw, Howard B. French making the presentation.

THE WILLIAM B. WEBB MEMORIAL PRIZE, a gold medal and certificate, offered by Mrs. Rebecca T. Webb, for the highest general average in the branches of committee, operative pharmacy and specimens, was awarded to Harry Elmer Wertz, the presentation being made by William J. Jenks. The following graduates received honorable mention in connection therewith: Samuel Young Althoff, Charles B. Fricke, Millicent Saxon Renshaw.

THE PHARMACY PRIZE, a gold medal, offered by Prof. Joseph P. Remington, for original pharmaceutical work, was awarded to John William Pearman Outerbridge, with honorable mention of Millicent Saxon Renshaw and David da Salva Pereira.

THE PHARMACOGNOSY PRIZE, a Zentmayer microscope, offered by Prof. Henry Kraemer, for original research in pharmacognosy, was awarded to Irwin Isaac Peiffer, the following graduates receiving honorable mention in connection therewith: Samuel Young Althoff, Charles B. Fricke, Wilbur LeRoy Lafean, Alexander Newton McCausland, John William Pearman Outerbridge, Harry Elmer Wertz.

THE MATERIA MEDICA PRIZE, $25, offered by Prof. Clement B. Lowe, for the best examination in materia medica, and in the recognition of materia medica specimens, with a meritorious thesis, was awarded to Millicent Saxon Renshaw, the following graduates receiving honorable mention in connection therewith: Charles B. Fricke, Clarence Franklin Gemmill, Irwin Isaac Peiffer, Frank Louis Schmidt, Howard A. Stonesifer, Harry Elmer Wertz.

THE ANALYTICAL CHEMISTRY PRIZE, $25, offered by Prof. Frank X. Moerk, for the best work in qualitative and quantitative analysis, was awarded to Thomas Carroll Davis, with honorable mention of Jesse Connor Chisholm and Elizabeth Davis.

THE MAISCH PRIZE, $25 in gold, offered by Mr. Jacob H. Redsecker, of Lebanon, Pa., for histological knowledge of vegetable drugs, was awarded to Walter Eugene Dittmeyer, Prof. Henry Kraemer making the presentation. The following graduates received honorable mention in connection therewith: Harry Coombs, Clarence Franklin Gemmill, Millicent Saxon Renshaw, Walter Henry Robeck.

THE OPERATIVE PHARMACY PRIZE, $20 in gold, offered by Prof. Joseph P. Remington, for the best examination in operative pharmacy, was awarded to George Brenner Kumpf, the presentation being made by James T. Shinn. The following graduates received honorable mention in connection therewith: Samuel Young Althoff, Eliza-

beth Davis, Charles B. Fricke, Roy Tupper Fuller, William David Lithgow, Michael Richard Long, James Sidney Lovatt, William Edward Moul, Irwin Isaac Peiffer, Millicent Saxon Renshaw, Leo Michael Wachtel, Harry Elmer Wertz.

THE THEORETICAL PHARMACY PRIZE, a Troemner agate prescription balance, offered by Mr. Mahlon N. Kline, for the best examination in theory and practice of pharmacy, was awarded to Jesse Connor Chisholm. The following graduates received honorable mention in connection therewith: Samuel Young Althoff, Thomas Carroll Davis, Jamella Fox, Wilbur LeRoy Lafean, John Swift Montgomery, Millicent Saxon Renshaw, Walter Henry Robeck, Frank Louis Schmidt.

THE COMMERCIAL TRAINING PRIZE of $20 in gold, offered by Prof. Joseph P. Remington, for the best examination in commmercial training at the final examination for the degree, was awarded to John Swift Montgomery, and presented by Prof. E. Fullerton Cook. The following graduates received honorable mention in connection therewith: Samuel Young Althoff, William Frederick Bee, Jesse Connor Chisholm, Harry Coombs, Charles B. Fricke, James Aloysius Garvey, Clarence Franklin Gemmill, Walter Eugene Dittmeyer, Lorne Edward Hastings, Robert Earle Jones, Rebecca E. Kilion, William D. Lithgow, Frank Louis Schmidt, John William Pearman Outerbridge, Millicent Saxon Renshaw, Milton Eugene Rohrbaugh, Edward Josiah Strunk, Leo Michael Wachtel.

THE INSTRUCTORS' PRIZE, $20, offered by the instructors of the College for the highest term average in the branches of pharmacy, chemistry and materia medica, was awarded to Charles B. Fricke, Prof. F. P. Stroup making the presentation. The following graduates received honorable mention in connection therewith: Thomas Carroll Davis, Millicent Saxon Renshaw, Frank Louis Schmidt, Harry Elmer Wertz.

THE PHARMACY QUIZ PRIZE, one year's membership in the American Pharmaceutical Association, offered by Prof. Charles H. LaWall, for the best term work in theory and practice of pharmacy, was awarded to John Swift Montgomery. The following graduates received honorable mention in connection therewith: Thomas Carroll Davis, Charles B. Fricke, Frank Louis Schmidt, William Frederick Shafer, Millicent Saxon Renshaw, Harry Elmer Wertz.

THE KAPPA PSI FRATERNITY PRIZE, $20 in gold, offered by the

Eta Chapter of the Kappa Psi Fraternity to the graduate making the highest general average during the three years' course at the College, was awarded to Millicent Saxon Renshaw, Dr. Adolph W. Miller making the presentation.

COMPLIMENTARY SUPPER GIVEN BY THE FACULTY.

On Wednesday evening, April 13th, a complimentary supper was tendered the graduating class by the members of the Faculty. The supper was given in the Museum of the College, and among the invited guests were some of the officers and members of the College. Professor Remington acted as toast master, and short speeches were made by members of the Faculty, the Instructors, officers of the College, and by a number of the graduating class.

BACCALAUREATE SERMON.

Baccalaureate services were held in Christ Church, Second Street above Market, on Sunday, April 10th, the sermon being delivered by the rector, Rev. C. Ellis Stevens, LL.D., D.C.L.

ALUMNI ASSOCIATION.

The annual reunion and banquet of the Alumni Association was held at the Colonnade Hotel on Tuesday evening, April 12th. There was a large number of members in attendance, and remarks were made by representatives of the several classes dating back to 1842, Wm. J. Jenks, second vice-president of the class, responding for this class. Mr. Thomas S. Wiegand, of the class 1844, who has usually been present on these occasions, was not able to be with the alumni, owing to illness, and a committee was instructed to frame a letter to him expressing the sympathy of those present and wishing him a speedy recovery.

The fortieth annual meeting of the Alumni Association was held in Alumni Hall, Monday afternoon, April 11th, at 2.30 P.M., with the President, Albert Oetinger, in the chair.

First in order was the annual address of the chairman, after which reports from the other officers and standing committees were received. The annual election was then held and resulted in the choice of the following officers: President, Walter A. Rumsey; Vice-Presidents, Freeman P. Stroup and John D. Burg; Recording Secretary, Joseph W. England; Corresponding Secretary, Charles H. LaWall; Treasurer, C. Carroll Meyer; Board of Directors,

John W. Fry, Florence Yaple, Otto W. Osterlund, Willard R. Graham, Edward A. Eyer and Clayton E. Morgan.

The annual reception given by the association to the members of the graduating class was held the evening of the same day, in the College Museum, with President Oetinger in the chair. After the roll call of new members elected during 1903-04, an address was made by Prof. Clement B. Lowe.

The prizes offered by the Association were awarded as follows:

THE ALUMNI GOLD MEDAL for the best general average for the year was awarded to Millicent Saxon Renshaw, and presented by Walter A. Rumsey.

THE ALUMNI PRIZE CERTIFICATES, offered for the highest general average in Pharmacy, Chemistry, Materia Medica, Committee, Operative Pharmacy, Analytical Chemistry and Specimens were respectively awarded as follows, Prof. E. Fullerton Cook making the presentation: Jesse Connor Chisholm, Frank Louis Schmidt, Millicent Saxon Renshaw, William Dulin, George Brenner Kumpf, Thomas Carroll Davis and Harry Elmer Wertz.

THE ALUMNI SILVER MEDAL was awarded to George Mahlon Beringer, Jr., for the best general average in the second year examination, Prof. Freeman P. Stroup making the presentation.

THE ALUMNI BRONZE MEDAL was awarded to Herbert D. Flack, for the best general average in the first year examination, and was presented by Prof. Charles H. LaWall.

The Class Oration was delivered by Chester Arthur Duncan; the Class Poem by Reuben Warshawsky; the Class History by Wm. David Lithgow, and the Horoscope of the Class by Charles Arthur Walters.

EXAMINATION QUESTIONS.

The following is a copy of the questions given to the students of the third year class at their recent final examinations. Practical examinations were given in Operative Pharmacy and Analytical Chemistry, and these were held in the respective laboratories. Specimens for identification were given in connection with the written examination in each branch:

THEORY AND PRACTICE OF PHARMACY.

A—Opium.—(1) Why does the U. S. Pharmacopœia direct Opium to be made by incising the unripe capsules of the Poppy plant? (2) Name four principal alkaloids obtained from Opium? (3) What two natural acids are found

in Opium? (4) What is the object of deodorizing Opium? (5) Why is Morphine Acetate an undesirable salt? (6) How is Extract of Opium made? (7) How much Extract of Opium, assaying 20 per cent. of morphine, can be made from 1,000 grammes of Opium assaying 12 per cent.?

B—Give the unabbreviated official names of the following and also give the proper abbreviation for shop furniture labels: Compound Tincture of Lavender, Coxe's Hive Syrup, Mercury with Chalk, Cold Cream, Honey of Rose, Donovan's Solution, Brown Mixture, Basham's Mixture, Easton's Syrup, Lime Water, Blue Mass, Milk of Almond, Basilicon Ointment, Fowler's Solution, Colophony, Griffith's Mixture, Glyconin, Brandy, Hoffmann's Anodyne, Chalk Mixture.

C—(1) Give the characteristic color tests for the following: Salicin, Colchicine, Strychnine, Veratrine, Brucine. (2) Describe the thalleioquin test for quinine. (3) How can you get a rose-colored liquid in making this test?

D—(1) What is an antitoxin? (2) How is diphtheria antitoxin prepared? (3) How is it standardized? (4) What is the theory of the action of diphtheria antitoxin? (5) Why is it put up in hermetically sealed packages? (6) How is it administered?

E—(1) What is glass chemically? (2) From what is "green" glass made? (3) What is used to give an amber color to glass? (4) What is used to give a blue color to glass? (5) How are glass bottles molded? (6) What plan is used to make the letters on a glass bottle stand out sharply? (7) What is the best material from which to make ointment jars? (8) What is the best shape for a shelf ointment jar? (9) What is the best kind of an ointment box for dispensing? (10) Describe metallic tubes for dispensing ointments. What are their advantages?

F—(1) What is the Latin name for the class "Plasters?" (2) What two principal *official* vehicles are used in making plasters? (3) What constitutes a rubber-base plaster mass? (4) Describe briefly the method used in making rubber-base plasters. (5) Describe briefly the hand apparatus used by druggists in spreading plasters for stock or in quantity. (6) Make a sketch of a plaster for the left ear. (7) Make a sketch of a breast plaster.

G—(1) What is an emulsion? (2) What is the theory of emulsification? (3) What is meant by the Continental method? (4) What is meant by the English method? (5) What is meant by Forbe's method? (6) How can you tell when an emulsion is cracked? (7) What causes emulsions to crack? (8) How may you recover a cracked emulsion? (9) How are emulsions made on the large scale?

H—Incompatibility.—(1) Define the term. (2) What three kinds of incompatibility may be recognized? (3) Define each kind. (4) Give an example of each. (5) What rule should govern, when the dispenser is in doubt about filtering a prescription? (6) What is the proper procedure upon receiving a prescription known to contain a dangerous quantity of a poisonous substance?

I—Legislation.—(1) What is the prime object of pharmacy laws? (2) What is an *ex post facto* law? (3) Why is there not a United States pharmacy law? (4) Why should all fees be paid to the State and the Boards of Pharmacy be paid salaries? (5) What are the requirements with regard to the sale of poisons in your State?

K—Fill up three of the labels upon the sheet attached, writing suitable

directions for the following prescriptions : Cod-Liver Oil emulsion for a child ten years old, Fowler's Solution for a man, and Wine of Iron for a woman.

Then write three prescriptions upon the blanks printed upon the label sheet, for the following, numbering and dating each : (1) Twelve powders for a child six years old, suffering from mild indigestion and diarrhea caused by eating unripe fruit. (2) One for an old lady requiring a tonic, containing Quinine, Iron Phosphate and Elixir of Orange (teaspoonful dose, 8 ounce mixture). (3) One metric prescription for a man thirty years old, requiring a suppository containing Extract of Stramonium, Goulard's Extract and Creosote (twelve suppositories).

Write labels for the prescriptions above, and also for the following:

Upon labels for Nos. 4, 5, 6, 7 and 8 (see below), write brief directions for use—pills, ointment, drops, etc. (4) One for a simple ointment, ½ ounce, to apply for a slight eruption on the face, due to sunburn. (5) One for drops for inflamed eyes, 1 fluid ounce solution. (6) One for twelve tablet triturates, in screw-cap vial, for headache due to over-study. (7) One for a pint bottle containing Lime Water. (8) One for two dozen capsules of Phenacetin and Salol, 2½ grains each.

Fill in the address tag for one of the patients, using any name or address.

Fill in the check-blanks in lower left-hand corner for one of the patients.

CHEMISTRY.

A—(1) Describe Acidum Tartaricum and Acidum Citricum, and state how you would distinguish between them. (2) Give an account of the sources and method of production of each of these acids. (3) Give the formulas of several official salts of each acid.

B—(1) Write the structural formulas of Benzene, methyl-benzene and dimethyl-benzene. (2) What is the action of chlorine upon methyl-benzene under different conditions? Illustrate by the formulas of the products obtained. (3) What is the product of the action of concentrated sulphuric acid upon benzene? (4) What of the action of nitric acid? (5) Write the reaction in each case.

C—(1) What is the proper chemical name for aniline, and how is it formed? Write the formulas of the salts it forms with hydrochloric and sulphuric acids, respectively. (2) Write the structural formula of acetanilid, state how it is made and give the official tests for it. (3) Write the formulas of Diphenylamine and Metaphenylenediamine. (4) Do you know any characteristic reaction of either?

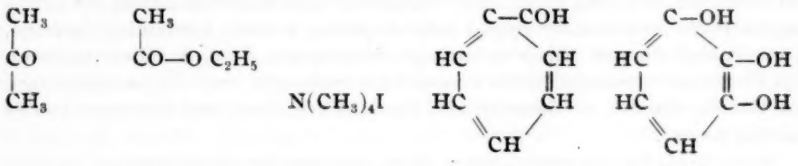
D—(1) Describe common Phenol, state how it is made synthetically and what are its official tests. (2) What is the structural formula of acet-paraphenetidin, and what is its medical name? (3) Guiacol is the monomethyl ether of pyrocatechin ; write its structural formula. (4) What is the main source of Guaiacol?

E—(1) What would be the proper chemical name of salicylic acid? Write its structural formula. (2) Write the formulas of neutral and basic sodium salicylate, respectively ; of methyl salicylate and of phenyl salicylate. (3) Anisic acid is the methyl ether of p-oxy benzoic acid. Write its structural formula.

F—(1) Describe Acidum Gallicum, and state the sources from which it is obtained. (2) Write the formula of bismuth monogallate and state its use in

pharmacy. (3) How is tannic acid related to gallic acid? (4) By what tests can the two be distinguished?

G—(1) Give the exact chemical names and, when official, the official names of the following compounds:



H—(1) Write the structural formulas for: Amyl nitris, Nitroglycerin, Sodii sulphocarbolas, Thymol, Resorcin, B-naphtol.

I—Food Adulteration.—(1) State the adulterations which are to be looked for in a sample of olive oil and the tests by which you would recognize them. (2) By what test would you distinguish between a genuine butter and oleomargarine? (3) How would you test a sample of milk for purity?

K—Proximate Organic Analysis.—(1) Given spirits of turpentine adulterated with petroleum benzin; state how you would determine the amount of adulteration. (2) Given a linseed oil adulterated with mineral oil and rosin oil; state how you would proceed to analyze it.

MATERIA MEDICA.

A—Jalap.—(1) State its official and botanical names, natural order and habitat. (2) What per cent. of resin should it yield? how is this resin obtained? what are its solubilities in ether and its chief constituent? (3) What is the action of the drug and in what doses is it given? What used to be prescribed under the name of "Rush's thunderbolt?" (4) Does worm-eaten jalap yield a greater or less per cent. of resin? (5) Should it be used for making official preparations?

B—Alkaloids.—(1) Give the botanical names of the plants from which the following are derived, viz.: Coniine, Berberine, Brucine, Sparteine, Nicotine, Physostigmine, Theobromine, Hyoscine, Atropine, Gelsemine, Pilocarpine, Aconitine, Emetine, Hydrastine, Cocaine. (2) Which of these is used as a mydriatic, which as a myotic, which stimulates the sweat glands, which will produce clonic convulsions, which acts as an emetic, which as a local anæsthetic?

C—Purgatives.—(1) Name the purgative principle present in each of the following drugs, viz.: Mandrake, Culver's Physic, Euonymus, Aloes, Senna, Ficus, Elaterium, Manna, Bitter Apple, Bryony. (2) Give the ordinary dose of any five of the above.

D—N. O. Umbelliferæ.—(1) Name the inflorescence and fruit which are characteristic of this order. (2) Give the official names of four fruits, the official names of the volatile oils yielded by these fruits and the doses and medicinal properties of the oils. (3) Name an official fruit derived from this order whose active constituent is an alkaloid and state its action. (4) Give official names of resins derived from this order. Which of these yields a sulphuretted volatile oil?

E—Synonyms.—(1) Give the principal synonyms of the following, viz.:

Marrubium, Iris, Eupatorium, Leptandra, Euonymus, Pyrethrum, Pimenta, Myristica, Capsicum, Sumbul, Absinthium, Hedeoma, Matricaria, Cypripedium, Inula, Eriodictyon, Aspidosperma, Frangula, Oleum Tiglii, Oleum Erigerontis.

F—Official Names.—(1) Give the official names of the following, viz.: Monkshood, Yellow Jasmine, Garlic, Foxglove, Deadly Nightshade, Mandrake, Pokeroot, Butternut Bark, Cascara Sagrada, Henbane, Jamestown-weed, Broom, Pleurisy Root, Oil of Sweet Birch, Bloodroot. (2) Which of these acts as a heart tonic, which as a heart depressant (sedative), which as an expectorant, which as laxatives, which as cerebral depressants?

G—Cinchona Bark.—(1) Name the botanical sources, habitat and countries from which our present supplies are obtained. (2) What do we mean by the terms "natural," "mossed" and "renewed" barks? (3) What per cent. of alkaloids does the latter often yield, name the principal constituents, state their medicinal properties, what name is applied to the effect produced by overdoses and what are these effects?

H—Doses.—(1) State the largest single dose which you would give of each of the following, viz.: Opium, Codeine, Morphine, Heroin, Strychnine, Atropine, Pilocarpine Hydrochlorate, Apomorphine Hydrochlorate, Caffeine, Hyoscine Hydrobromate, Cocaine Hydrochlorate.

I—Toxicology.—(1) Give the chemical antidotes and physiological antagonists for poisoning by the following drugs, viz.: Opium, Strychnine, Aconite, Belladonna, Chloral Hydrate.

K—Emergencies.—(1) What do we mean by the terms "incised wound," healing by "first intention," "healing by granulation"? (2) Briefly outline your method of treating (antiseptically) a scalp wound. (3) In hemorrhage from an artery at what point would you apply pressure to control bleeding? at what point in hemorrhage from a vein?

COMMITTEE.

A—Foxglove.—(1) Give the botanical name and natural order. (2) From what countries is the commercial supply of this drug usually obtained? (3) Describe the general appearance of the drug microscopically. (4) Name three official preparations of the drug. (5) What are their respective uses in medicine? (6) Name the active principles of Foxglove. (7) Is it safe to prescribe either of these principles? if not, why not?

B—Give the unabbreviated official or Latin name, ingredients, brief outline of process, and describe the appearance of the following: Prussic Acid, Lugol's Solution, Labarraque's Solution, Elixir of Vitriol, Plummer's Pills, Carron Oil, Strengthening Plaster.

C—If you were consulted by a physician and asked to suggest the best methods or recipes (pharmaceutically) for administering the following medicines to the sick, by the mouth, what would you advise? (One or two for each substance may be given.) (1) Chloroform. (2) Quinine Sulphate. (3) Tincture of Ferric Chloride. (4) Castor Oil. (5) Potassium Iodide. (6) Strychnine Sulphate. (7) Silver Nitrate. (8) Pumpkin Seed.

D—Doses and Antidotes.—Give the maximum single doses of each of the following: (1) Atropine Sulphate. (2) Extract of Nux Vomica. (3) Codeine Sulphate. (4) Tincture of Hyoscyamus. (5) Diluted Hydrocyanic Acid. (6)

Morphine Sulphate. Also give physiological antagonist and antidote. (7) Extract of Aconite. Also give physiological antagonist and antidote. (8) Strychnine Sulphate. Also give physiological antagonist and antidote. (9) Corrosive Sublimate. Also antidote. (10) Fowler's Solution. Also antidote.

E—Fehling's Solution.—(1) What is Fehling's Solution? (2) Under what title is this solution to be found among the volumetric solutions of the U.S.P.? (3) Give the approved method of keeping this solution, and state your reasons for the procedure. (4) What is the equivalent of 1 c.c. of the solution in terms of glucose? (5) How is Fehling's Solution to be used for the gravimetric estimation of glucose? (6) What is the ratio between the weighed cupric oxide and glucose? (7) How would you prepare a specimen of urine in order to test it for glucose?

F—Acetic Acid.—(1) What is the commercial source of Acetic Acid? (2) How is the crude product purified? (3) Name five official acetates. (4) Give the chemical formulas for each. (5) Explain the conditions favoring the acetous fermentation.

G—Give the unabbreviated official names and proper abbreviations for shop furniture labels for the following: Bromide of Potash, Saltpetre, Calomel, White Arsenic, White Vitriol, Copperas, Sal Soda, Glauber's Salt, Yellow Prussiate of Potash, Rochelle Salt, Cream of Tartar, Liver of Sulphur, Litharge, Sugar of Lead, White Precipitate, Red Precipitate, Tartar Emetic, Burnt Alum, Hypo, Kermes Mineral

H—Criticise the following prescriptions. Write out, with English names, the ingredients and quantities. Would there be any chemical action? State how you would compound them, or what course you would pursue. Give the meaning of any marks or numbers on the margins:

℞ Tr. Ferri Chlor.
Tr. Opii Camph.
Ng Tr. Lavand. Comp. āāf℥ss
Mist. Cretæ q. s. ad f℥iv
Sig.—A teaspoonful 3 times a day.
March 20, '04. M. P.

℞ Sodii Bicarb. ℥iij
Sodii Borat. ℥ij
Acid Carbolic f℥ss
LX Glycerini f℥i
Aquæ q. s. ft. Oss
Sig.—Apply as directed.
March 22, '04. V. K.

I—Would you compound the following prescriptions as written? What course would you pursue? Write out, in English, the correct translation of ingredients and quantities:

℞ Antipyrin
Chloral Hydrate āā 2 gm.
Ft. chart. No. X.
Sig.—Add one powder to a tablespoonful of water and take as required. C. W.

℞ Pulv. Rad. Belladon. gr. ss
Flor. Benzoes
Tannin Pur. āā gr. i
Sacch. Alb. q. s.
M. ft. pulv. d. t. d. No. XX.
Sig.—Every morning and evening 1 powder to be taken. G. D.

K—Criticize the following prescriptions. (1) How would you compound them? (2) Does reaction take place between the ingredients? If so, what? (3) Are they safe to dispense? If so, how? (4) Would you put a poison label on the bottles? (5) Translate, writing out the quantities and ingredients in English, also the signa.

For Baby Maud.

℞ Potass. Cyanid. gr. i
Acid. Citric gr. ij
Syr. Tolut. q. s. ft. f℥ij
Ft. mist.
Sig.—Half a teaspoonful when cough is troublesome. A. T.

℞ Potass. Chlor. ℥i
Acid Mur. f℥ss
Aquæ q. s. ft. f℥vi
Ft. solutio sec. art.
Sig.—Use as directed. P. D. H.

COMMERCIAL TRAINING.

A—Ordering Goods.—Write out an order upon Thomas Jackson, Son & Co., Wholesale Druggists, New York City. You are not known to them, but have good credit. Be careful to use proper forms, abbreviations and details. Select any ten articles that you would be apt to need in the retail drug business, each representing a different class of goods—say, one chemical, one drug, one fluid extract, one kind of soap, one kind of hair-brush, etc. Write the order in such a form that the drug house would not be in doubt on any single point. Fold the order properly, place it in an envelope, addressing it correctly and indicate where the stamp should be placed. Do not fold.

B—Business Letter.—Write a model letter, containing about 100 words, asking for a position. Address it to either a retail druggist, manufacturer or wholesale house who may have a vacancy. Give such information about yourself as you think would be useful and would impress the firm with the desirability of securing your services. Fold the letter properly and place it in an envelope correctly addressed. Do not seal. (Two envelopes are furnished for question B. Why?)

C—Banking.—(1) What is the principal object of a bank? (2) What is meant by a bank check? (3) How do banks make money? (4) What is a clearing house? (5) What is the object of identifying a depositor? (6) What is the name of the clerk who receives your deposit? (7) What is the name of the person who cashes checks? (8) What is meant by "discounting" a note? (9) What is the object of drawing a check

"to order?" (10) Name some of the expedients used to protect the drawer of a check from loss through what is known as "raising" a check. (11) When a check is drawn to your order with your name improperly spelled, what is the proper course to pursue? (12) Draw a check upon the College House Bank for $26.76, using the blank furnished and omitting no necessary detail, $50 being the balance on deposit before the drawing of the check.

D—Insurance.—(1) Define insurance. (2) Name four kinds of insurance in common use. (3) What is meant by an "Endowment Policy?" (5) What is meant by "reinsurance?" (6) Why are Assessment Life Insurance Companies unsafe ventures? (7) Why is a relatively large premium demanded from an old man? (8) What is meant by an annuity policy? (9) Define "beneficiary."

E—Partnership.—(1) Define partnership. (2) Give reasons for the necessity of care in selecting a partner. (3) Is each partner liable for obligations contracted by one of the others? (4) Why should one partner be delegated to sign all checks? (5) What is the danger to the business if a partner endorses an accommodation note?

F—Mercantile Agencies.—(1) Define the object of a mercantile agency. (2) Why should proper information be given to them? (3) How does such an agency derive its support?

G—Mailing.—(1) What constitutes a proper package for small articles to be sent by mail? (2) Where should the postage stamps be placed upon paper boxes sent by mail? (3) What is necessary to secure the return of a package wrongly addressed? (4) What advantages are there in sending packages by letter postage? (5) What advantage is there in sending an advertising circular by letter postage? (6) How may money be safely sent by mail? (7) What is meant by "registering" a letter, and what are its advantages?

H—Definitions.—Define the following terms: (1) Mortgage. (2) Lease. (3) Deed. (4) Draft. (5) Invoice. (6) Letter of credit. (7) Certified check. (8) Judgment note. (9) Codicil. (10) Wild-cat money.

I—Card Indexes.—(1) Describe the card-index system for general purposes. (2) How may such a system be used in bookkeeping for the retail drug business? (3) What is the advantage of the use of rods, and what is the best form of rod?

J—Business Law.—(1) Define "days of grace." (2) Is a signature written with lead-pencil good at law? (3) What is meant by "binding the bargain?" (4) Why should checks be presented for payment soon after their receipt? (5) Why is a promissory note given in a gambling transaction void? (6) What is meant by "statute of limitation?"

ANALYTICAL CHEMISTRY.

I. (*a*) Describe the determinations of Mg and SO_4 in Magnesium Sulphate. (*b*) If 1 gramme of material yields 0·148 Magnesium Pyrophosphate and 0·311 Barium Sulphate, what is the per cent. of crystallized Magnesium Sulphate?

II. (*a*) Describe the estimation of Urea. (*b*) Write the reaction showing the decomposition of Urea. (*c*) What is the per cent. of Urea in a specimen of urine if 4 c.c. (sp. gr. 1·024) yield 20 c.c. gas? (*d*) Why is no correction for temperature necessary in this determination?

III. (*a*) Describe four tests which will distinguish between Brucine and

Strychnine. (*b*) Describe four tests which will distinguish between Morphine and Quinine.

IV. (*a*) Give the classification of Volumetric Solutions depending upon chemical changes in their use. (*b*) Classify the Volumetric Solutions which you have used. (*c*) Give two illustrations of a direct and of a residual titration.

V. How would you estimate, volumetrically, the following substances, giving names of the Solutions, Indicators, End Reaction and Molecular Ratio between the substance and the Volumetric Solution.

(*a*) Phosphoric Acid. (*b*) Sodium Chloride. (*c*) Arsenous Oxide.
(*d*) Sodium Thiosulphate. (*e*) Phenol.

VI. Describe fully the volumetric estimation of (*a*) Sodium Carbonate. (*b*) Ferrous Sulphate.

VII. Describe fully the volumetric estimation of Calcium Hypophosphite.

VIII, IX, X. Practical laboratory work in the determination of the following: Sodium Carbonate, Ferrous Sulphate, Calcium Hypophosphite.

MINUTES OF ANNUAL MEETING.

The annual meeting of the Philadelphia College of Pharmacy was held on March 28, 1904, at the College building, 145 N. Tenth Street.

Twenty-six members were present, the President, Howard B. French, presiding. The minutes of the quarterly meeting, held December 28, 1903, were read and approved. The minutes of the meetings of the Board of Trustees for December 1, 1903, January 5 and February 2, 1904, were read by the Registrar, J. S. Beetem, and approved.

The annual meeting being the occasion for the reports of the officers and standing committees, these were given in the following order:

President's Report.—Mr. French stated, among other things, that: "The walls and ceilings of the chemical laboratory had been repaired and painted and the seats repaired and put in order. Some changes were made in the heating and lighting plant, which have proved satisfactory and of material advantage to the College. During the coming summer it will be necessary to make some material changes in the electric light wiring system in order to increase its efficiency. Other necessary repairs have been made, so that the entire property is in fairly good condition. The debt of the College has been reduced during the year, and the Treasurer will commence the next fiscal year (from May 1st) with a better balance than last year. For the term 1903–04 there is an increase in the number of students over the preceding year, and in individual

instruction in the laboratories and special courses a gratifying increase is noted. The course in Commercial Training is an obligatory course for the third year students and is again strongly commended, as it is deemed of inestimable value to the students. During the term two Junior students have died. Seven active members have been added to the College membership, and eight have been elected associate members. There have been two deaths.

"Arrangements are being made to lengthen the course of instruction, and it is anticipated that one week will be added to the first year course, two weeks to the second year course, and four weeks to the third year course. It is suggested that the extension of time for the third year classes shall be largely utilized for instruction in food adulterations, which will place the graduates in position to examine food products, not only to the credit of their profession, but to their advantage financially.

"The suggestion in last year's report regarding a post-graduate course is renewed as of so much importance to be kept in mind by the Committee on Instruction. This special instruction, it is hoped, will open the way to extend the laboratories to provide for special instruction, such as analyses of water, iron and steel products, gas, sugar, cement, etc. In one line in particular, that of cement, the field is unusually wide, and the demand for expert chemists in this line largely unfilled and constantly increasing.

"The Historical Committee have been actively at work, and have secured information which is very desirable to preserve. They have also succeeded in gathering together many articles of historical value, and it will be necessary in the near future to provide cases in the Museum for their protection and exhibition.

"In closing, the President desires to express his commendation of the work of the Alumni Association and of all those actively connected with the work of the College."

Historical Committee.—George M. Beringer, the chairman, reported as follows: "During the year a beginning has been made upon the collection of data and such information, records and materials obtainable, relating to the history of pharmacy. A card catalogue has been prepared, containing the names of all the graduates of the College now living. A circular letter has been prepared and sent to each graduate, soliciting answers to the queries and such additional information as could be supplied. A great many have re-

sponded, but quite a number have not yet been heard from, and it will be necessary to continue the correspondence. Papers and notes of especial interest and historic value have been received from thirty-two (32) persons, and donations for the Historical Section of the Museum have been received from fifteen persons."

Committee on Publication.—Prof. Samuel P. Sadtler, the chairman, reported that THE AMERICAN JOURNAL OF PHARMACY had been issued regularly during the year; the number of unsold volumes on hand was estimated at about 1,875, covering the period from 1829 to the present time.

The members of the College were requested to be on the look-out for back volumes previous to and including 1876, particularly the four preliminary numbers published previous to 1829, and the volumes for 1829, 1830, 1831, 1833, 1834, 1835, 1842, 1846, 1847, 1856, 1865. The committee acknowledged their indebtedness to Mr. Wm. McIntyre for the first two volumes (1829 and 1830); the Morris Perot Estate for a number of volumes, including several of the rare ones; Dr. Susan Hayhurst for quite a number of volumes; Messrs. Seabury & Johnson, of New York, for some recent back numbers, and to Mr. M. I. Wilbert for having secured several of the earlier and more rare volumes.

The editor's report was read by Prof. Henry Kraemer. On motion of Professor Remington, it was ordered that so much of the report as the editor might select be published in the JOURNAL (p. 223).

The report of the Committee on Pharmaceutical Meetings was read by Professor Remington: "During the past year the meetings have been held regularly, and have been of professional and practical interest. Much of the time has been devoted to discussions following the reading of the papers. The minutes of the meetings have been published regularly in THE AMERICAN JOURNAL OF PHARMACY, and reports of the meetings have been sent to various of the drug journals, and in some cases to the daily papers. It is proposed to consider some of the legal, ethical and professional problems which confront the pharmacists at succeeding meetings, and members are urged not only to attend the meetings, but to bring forward suggestions whereby the conditions of pharmacy may be improved."

Librarian's Report.—Owing to the illness of the librarian, Mr. Wiegand, the report was not presented, but it was stated that during the past year 108 volumes of theses had been bound.

Curator's Report.—Joseph W. England reported: "The Museum is in good condition and has received a number of contributions during the year. The collection of official drugs and preparations in the students' reading-room is likewise in good order, and is daily studied by the students with interest and profit. The need of additional shelf-room grows more imperative, especially in view of the recent addition by the Historical Committee."

The following-named gentlemen, proposed for honorary membership at the quarterly meeting in December, were then balloted for and unanimously elected:

Prof. Dr. Julius Wiesner, of Vienna.
Prof. Dr. A. E. Vogl, of Vienna.
Prof. John J. Abel, Johns Hopkins University.
Prof. W. G. Farlow, Harvard University.
Mons. Eugene Léger, Paris.
Mons. Prof. Emil Bourquelot, Paris.
Mons. Alf. Riche, Paris.
Mons. Eugène Collins, Paris.
Mons. Prof. Guignard, Paris.

The president appointed the following as delegates to the Pennsylvania Pharmaceutical Association for the meeting to be held at Cambridge Springs, June 21st–23d: H. L. Stiles, W. L. Cliffe, Joseph W. England, Mahlon N. Kline and C. A. Weidemann.

Announcement was made of the death of Mr. Frank Luerssen, at Salem, N. J., on January 6, 1904. He was elected a member of the College in 1897.

The annual election being next in order, Wallace Procter and C. Carroll Meyer were appointed tellers, who, after a ballot, reported the unanimous election of those proposed by the Committee on Nominations, as follows:

President, Howard B. French; First Vice-President, William J. Jenks; Second Vice-President, R. V. Mattison, M.D.; Treasurer, James T. Shinn; Corresponding Secretary, A. W. Miller, M.D.; Recording Secretary, C. A. Weidemann, M.D.; Curator, Joseph W. England; Librarian, Thomas S. Wiegand; Editor, Henry Kraemer; Trustees, Samuel P. Sadtler, Wm. L. Cliffe and Joseph L. Lemberger. Publication Committee: Henry N. Rittenhouse, Samuel P. Sadtler, Wallace Procter, Joseph W. England, Henry Kraemer, Joseph P. Remington and Martin I. Wilbert. Committee on Phar-

maceutical Meetings: Henry Kraemer, Joseph P. Remington, C. B. Lowe, M.D., William L. Cliffe and William McIntyre.

C. A. WEIDEMANN, M.D., *Secretary.*

PHARMACEUTICAL MEETING.

The seventh of the series of pharmaceutical meetings of the Philadelphia College of Pharmacy for 1903-04, was held Tuesday afternoon, April 19th, with Dr. C. A. Weidemann in the chair.

William A. Selser, a well-known apiarist, of Jenkintown, Pa., was the first speaker on the programme, and read a paper on "The Origin and Formation of Honey and its Relation to the Polariscope," which will be published in the June issue of this JOURNAL. Mr. Selser made the statement that while there are a number of methods for the detection of adulteration in honey, yet the results obtained by means of the polariscope are the only ones that can be relied upon with certainty.

Mr. E. M. Boring referred to a paper which appeared in this JOURNAL some years ago, and in which the claim was made that honey kept in the light will crystallize, whereas if kept in the dark it will remain fluid. Apropos of this statement, Mr. Selser said that all pure honey will crystallize or "candy" in time. He said that in order to preserve it in a fluid condition it should be kept thoroughly quiet and at an even temperature. He further stated that honey as capped in the cells of the hive is practically free from air and will not crystallize, unless the hives be moved, so as to cause injury to the caps; and also that in the bottling of honey it is necessary to use a wax which is air-tight. In reply to a question by Mr. W. A. Rumsey in regard to the use of water for liquefying crystallized honey, Mr. Selser said that its use was unnecessary, and that if the honey were carefully heated it would liquefy.

Dr. Lowe brought up the question of poisoning by honey, and in the discussion of this subject Mr. Selser stated that in the cases on record of which he was aware, it appeared that it was the comb which contained the poison rather than the honey itself.

A. Augusto, an Italian pharmacist of Philadelphia, read an interesting paper on "The Italian Olive Oil on the American Market." (See page 219.) An instructive feature of the discussion on this paper was the denial by Mr. Augusto of the statement current for

many years that large quantities of cotton-seed oil are exported to Italy from this country and returned to us as olive oil. He said that cotton-seed oil is generally used by the Italians for burning in their lamps, it being free from odor. According to Mr. Augusto, when a good olive oil is burned there is no odor, but if a second-quality oil be used, the odor is quite disagreeable. Another point, which was emphasized by Mr. Augusto, was the fact that the so-called Italian olive oil on the American market is manufactured in New York. Professor Kraemer confirmed this statement by referring to a bulletin recently issued by Dr. Wiley, of the U. S. Department of Agriculture, in which he showed that the so-called olive oil on our markets is a product due to the genius and skill of certain manufacturers in New York.

In view of the statement made by Mr. Augusto in regard to the testing of the oil, namely, that the tester must be familiar with the genuine product in order to judge of the quality of a sample, Professor Kraemer remarked that one would be inclined to look upon the usual tests as more or less fallacious. He then referred to the practice of testing teas, wines, etc., by means of the senses, and also to the fact that this is one of the methods employed by the U. S. Department of Agriculture for testing tobaccos.

M. I. Wilbert, Ph.M., presented a paper entitled, "The Pharmacist and the Pharmacopœia," in which he traced the evolution of the U. S. Pharmacopœia and the several dispensatories. (See page 203.)

J. W. P. Outerbridge, P.D., a recent graduate of the college, exhibited and described a prescription file of his own devising. (See page 221.)

Mr. Boring said that he used a device somewhat similar, that is, a perpendicular wire, but that he used clothes-pins for shoving the prescriptions up and down. Mr. Wilbert said that at the German Hospital it was desirable to refer to the prescriptions on file frequently and rapidly, and that he had found a box-file having two horizontal wires, so that the prescriptions hang on the wires, adapted to this purpose. When referring to the prescriptions the arrangement is such that the prescriptions stand in place, and those ahead can be turned down, thus facilitating the work.

George E. Outhette exhibited a typewriting machine manufactured by the Blickensderfer Manufacturing Company, and adapted for writing labels.

FLORENCE YAPLE,
Secretary pro tem.